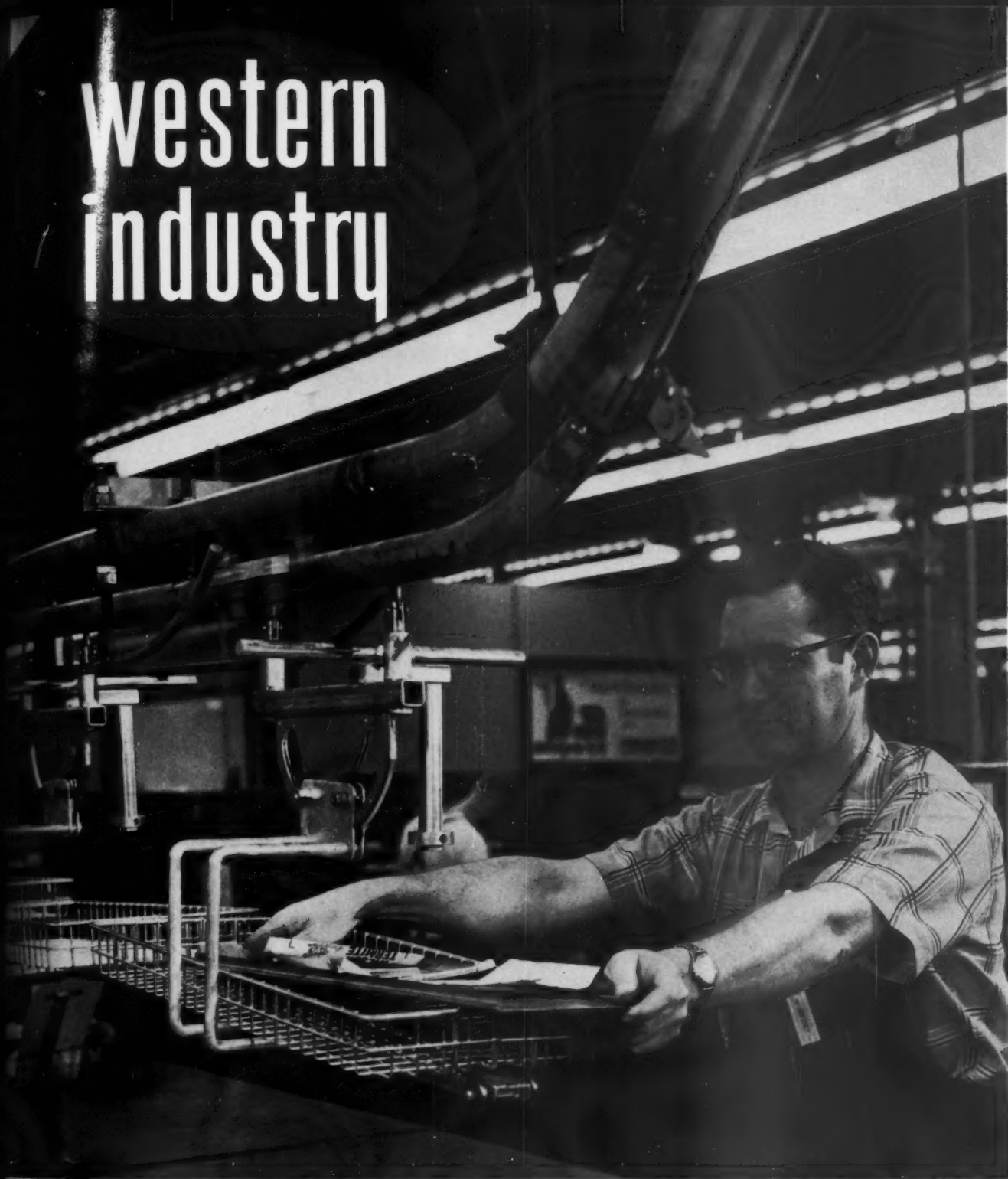
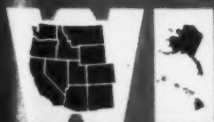


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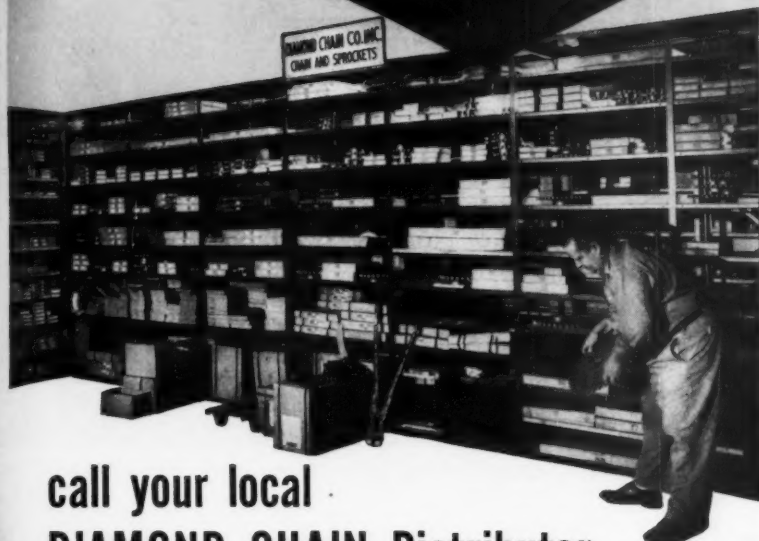
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APRIL-1960
Vol. 25 No. 4

western
industry



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COVER PHOTO *Automatic overhead conveyor system speeds handling at Times Mirror Press, Los Angeles. Here operator places load in basket that will travel from the composing room to another pre-determined station. See page 43.*

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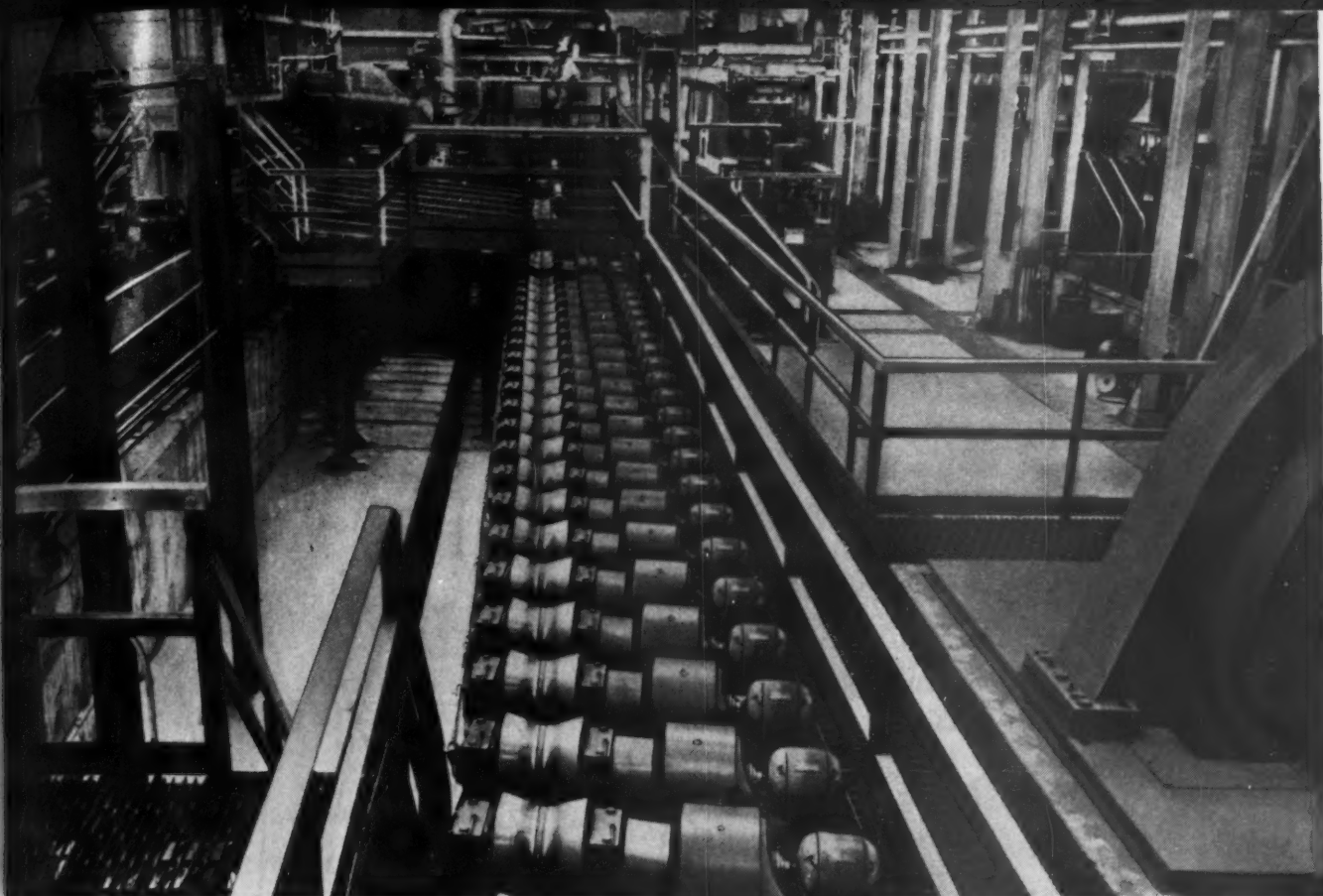


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FALK All-Motor Motoreducers driving pipe conveyors in seamless tube mill.

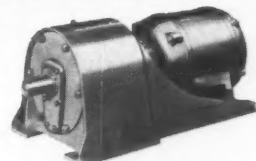
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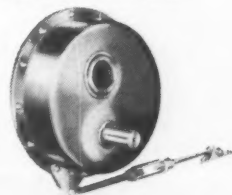
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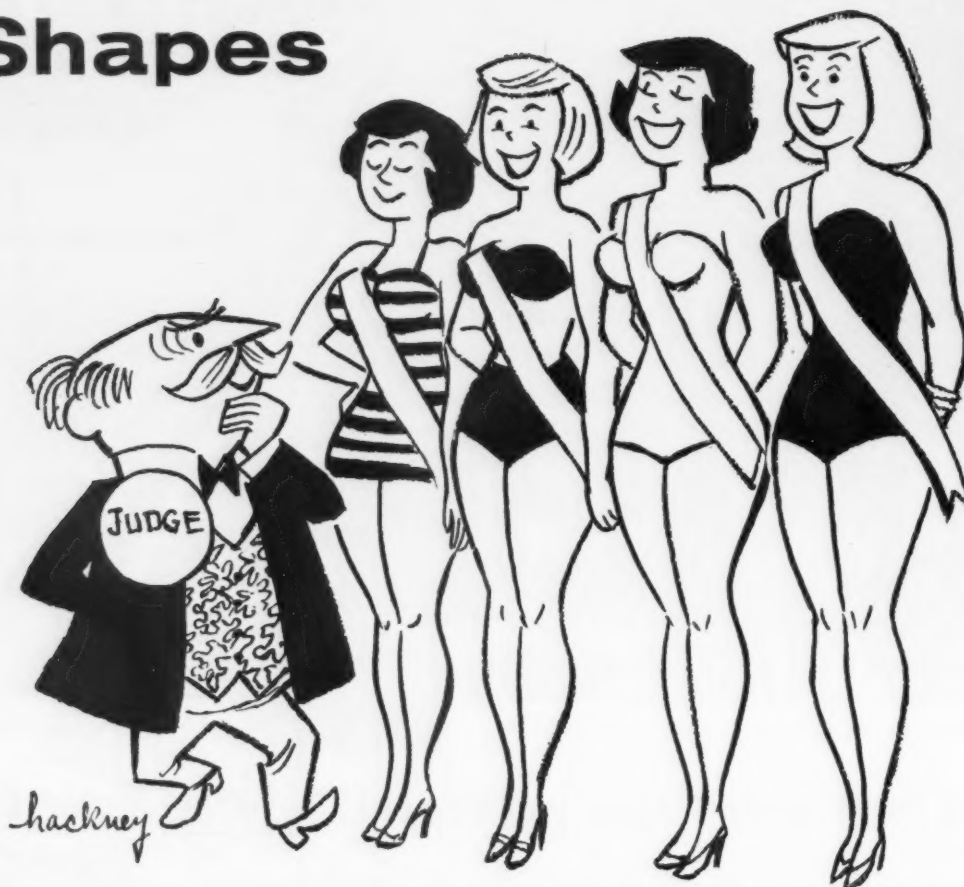
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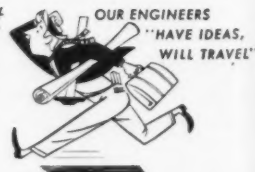
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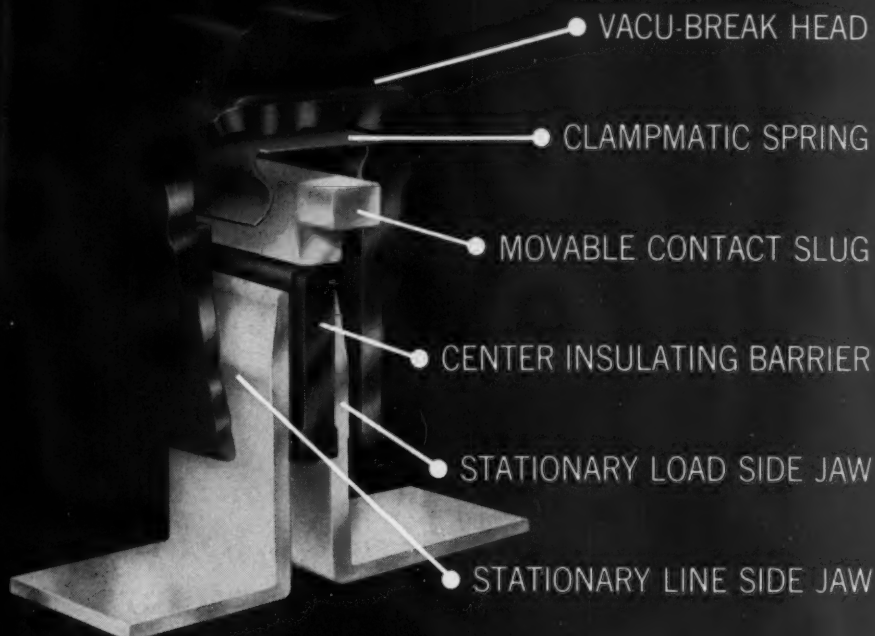
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THE INSIDE STORY...

Why switches last longer with clamped pressure contact and Vacu-Break arc control

This BullDog Vacu-Break® Switch Head is the reason why Vacu-Break switches stay in action longer.

The unique Clampmatic® spring clamps the contact slug firmly between the line and load jaws . . . provides a virtual bolt-tight connection! This clamped pressure contact prevents overheating while in the "on" position—and as the switch moves to "off," the spring speeds the break. Both features mean longer switch life and improved performance.

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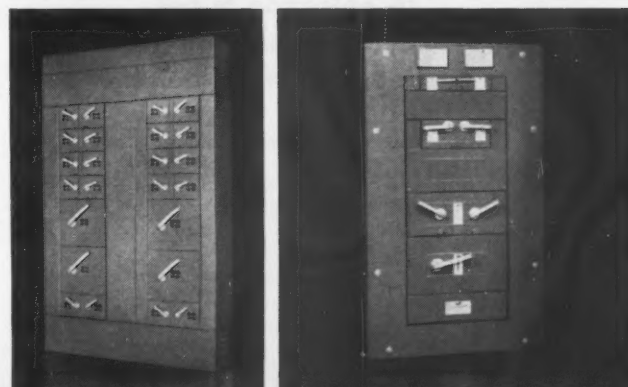
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Vacu-Break switch units with clamped pressure contacts are available in BullDog Safety Switches, Switchboards, Vacu-Break Power Panels and Bus Plugs. They cost no more and give your customers the maximum in safety and performance. See your BullDog field engineer.





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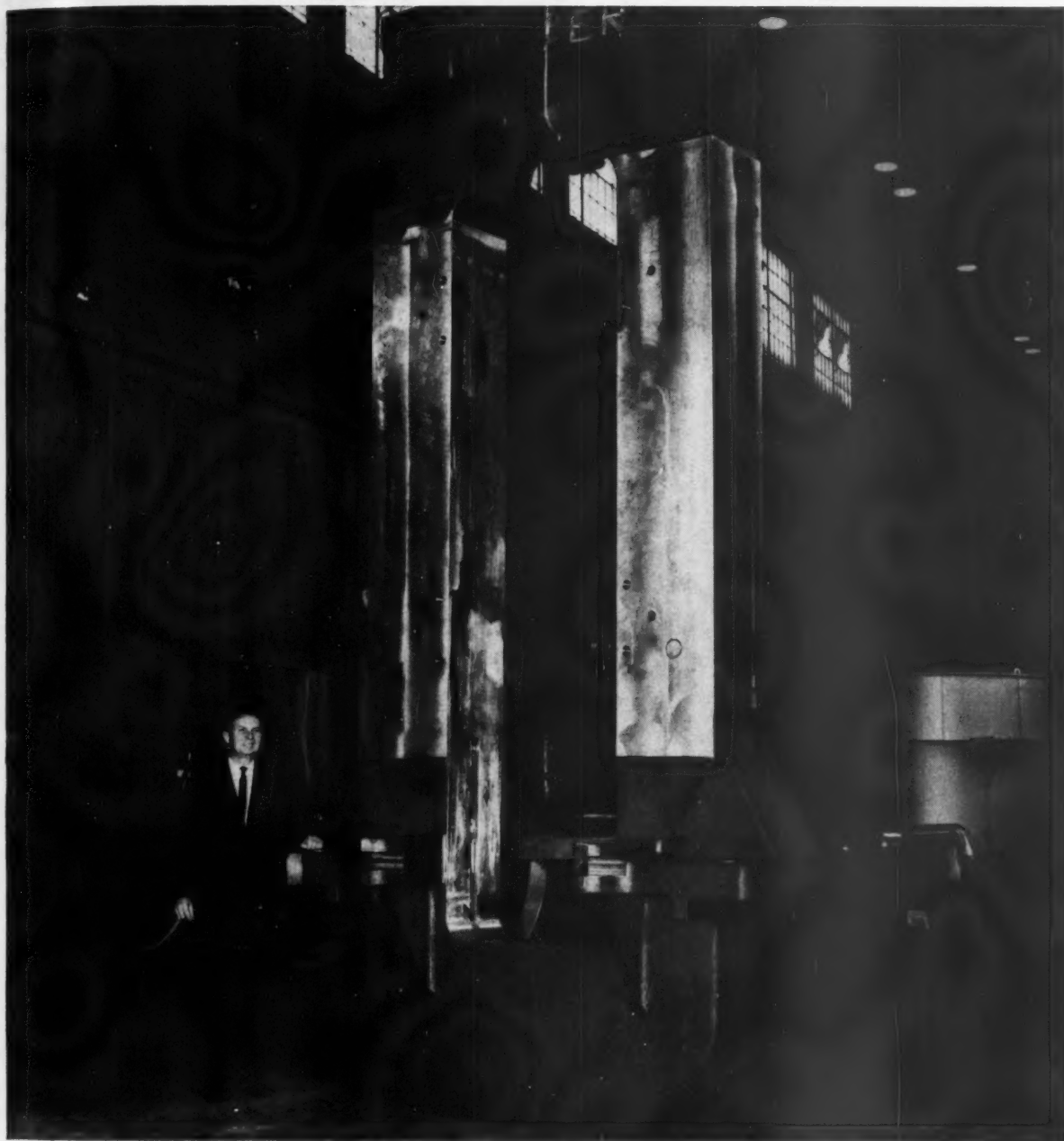
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See!

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western meetings

Instrument-Automation Conference & Exhibit To Be Held in San Francisco May 9-12

SUBJECTS RANGING FROM air pollution and the instruments used to determine its nature and extent to the proper specification and use of control valves in industrial processes, will occupy the attention of scientists, engineers, technicians and educators meeting in San Francisco from May 9 through 12. This will be during the Summer Instrument-Automation Conference & Exhibit being held under the auspices of the Instrument Society of America in San Francisco's Civic Auditorium and Brooks Hall. This will be the first Conference & Exhibit the Society has ever held in San Francisco.

The event is expected to attract more than 5,000 persons from the United States and Canada, and especially from the eleven Western States.

Approximately 25 technical sessions will be held during the four days and some 60 papers will be delivered by instrumentation authorities from many parts of the United States. All Conference sessions will be held in the Civic Auditorium. The Exhibit, to be held in Brooks Hall adjacent to the Auditorium, will be open May 10, 11 and 12. It will feature the display and demonstration of the latest in instruments, controls, systems and components of some 200 of the latest in instruments, controls, systems and components of some 200 of the nation's leading manufacturers. Value of the exhibits, to be shown in some 20,000 square feet of floor space, is expected to be well over \$1,000,000.

The Northern California and the Santa Clara Valley Sections of ISA will act as the Host Committee, and have arranged a series of programs of varied activity outside of the Conference sessions for attendees. These include both a Management Day and a Student's Day program at the Exhibit; special programs for the ladies, and a series of plant tours.

Being held simultaneously with, but separately from, the Conference and Exhibit, will be ISA's 3rd National Power Instrumentation Symposium at San Francisco State College, from May 9 through 11. This is being conducted under the Power Industry Division of the Society. Papers to be delivered are concerned with such subjects as the instrumentation and automatic controls used in nuclear power plants; control station automation as carried out in one of the plants of Southern California Edison Company; control and data systems for large steam generating units; practical heat analysis and how automatic equipment can be used. Several hundred power engineers from all parts of the United States are expected in attendance.

Special attention will be paid during the Instrument-Automation Conference sessions at the Civic Auditorium to the concepts, techniques and applications of scientific equipment and methods to many processes and industries,

especially those manufacturing electronic, aeronautical and space systems; chemical and petroleum production and processing, and iron and steel production.

Conference sessions include those devoted to nuclear instrumentation; aeronautical instrumentation; metals and ceramics instrumentation; feedback controls systems; analysis instrumentation, measurement and control instrumentation, and sessions dealing with air pollution instrumentation, with specific reference to methods pursued in some of the West Coast cities. In addition ISA will, in cooperation with The American Meteorological Society, sponsor two sessions on aerosols and condensation phenomena instrumentation.

Other Conference sessions will be devoted to an instrument maintenance clinic; a maintenance management workshop, a sales engineering workshop with special attention paid to developing sales in the military market, and an educators' workshop.

Western Architectural Metal Mfgs. Elect New Officers at Phoenix, Arizona



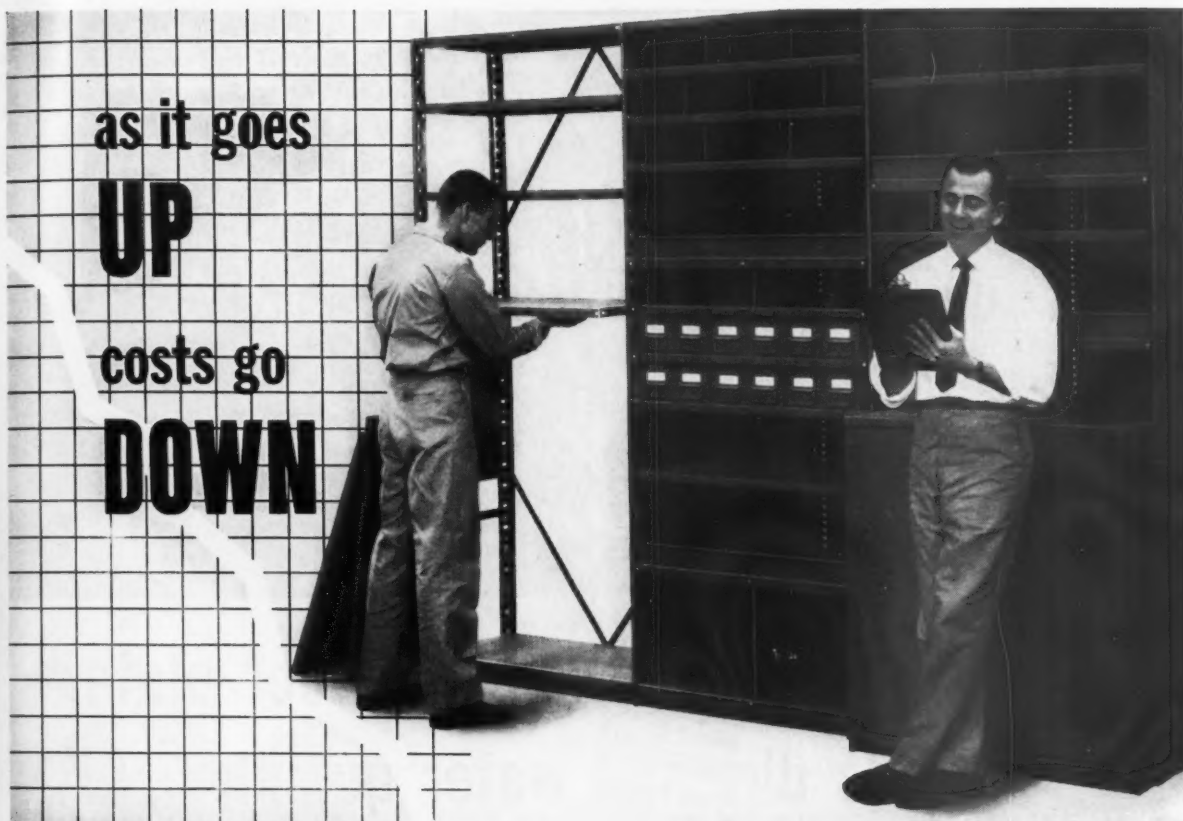
NEW OFFICERS representing association in photograph are H. M. Sargeant, Pacific Regional Architectural Sales Manager of Reynolds Metals Co., Los Angeles; William Dreusike, chairman of board of Druwhit Metal Products, Los Angeles, new president of association and John J. Donovan, president of Universal Window Co., Berkeley, California, the retiring president of group standing in for William A. Schiessl, president of Fentron, the new secretary who was unable to attend the quarterly meeting of group.

Westerners Receive ASTM Awards

AWARDS OF MERIT have been presented by the American Society of Tool and Manufacturing Engineers to two Western members, Arthur E. Crom, San Diego Chapter, manager of manufacturing, research and development, Con-vair Division, General Dynamics Corp., and Raymond E. Gariss, Long Beach Chapter, senior tool design engineer, Douglas Aircraft Co. A total of 14 awards were made by the society.

The plaques are bestowed each year on members who have made significant contributions to the Society at both the local and national levels. Nominations are made by the 163 Chapters and winners selected by ASTM's National Honor Awards Committee.

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MEETINGS

(Continued)

14th Alkaline Pulping Conference To Be Held August 22 in Portland

THE 14TH ALKALINE Pulping Conference sponsored by the Technical Association of the Pulp and Paper Industry (TAPPI), will be held August 22nd through 24th, 1960, at the Multnomah Hotel, Portland, Oregon.

D. Wetherhorn, Continental Can Company, Port Wentworth, Georgia, newly appointed chairman of the TAPPI Alkaline Pulping Committee is the general conference chairman. P. H. West, Thilmany Pulp and Paper Company, Kaukauna, Wisconsin, vice chairman of the Alkaline Pulping Committee, is the technical program chairman for the Alkaline Pulping Committee's portion of the program. P. J. Frost, Crown Zellerbach Corporation, Camas, Washington, is technical program chairman for the Sulfite Committee's portion of the program.

A. H. Wickett, Weyerhaeuser Timber Company, Longview, Washington, is local arrangements chairman, and he is being assisted by K. M. Shold, Crown Zellerbach Corporation, Port Townsend, Washington.

The program will offer four technical sessions. Three of these will be on alkaline pulping and the fourth will be on sulfite pulping.

1961 Metals Congress



HOLDING BOTH A SYMBOLIC hour glass and a copy of the American Society for Metals handbook, Allan Ray Putnam, managing director of the ASM, poses in Los Angeles during a dinner and press conference held for the regional trade press. Putnam, named ASM head in 1959, is on a west coast tour of ASM chapters. Society has 31,000 members in 111 chapters nationwide. Press conference subjects centered around the forthcoming ASM Metals Congress slated for March 1961 at the Pan Pacific Auditorium, Los Angeles. Hourglass is used by Putnam to limit "off the cuff" speeches to 20 minutes.

Pacific General Meeting for Electrical Engineers

THE 1960 PACIFIC General Meeting of the American Institute of Electrical Engineers will be held at the El Cortez Hotel, San Diego, California, August 9 through August 12. The program includes technical sessions devoted to the latest developments in electrical engineering, inspection trips to scientific and industrial installations in the San Diego area, and programs of interest to all persons attending the meeting.

Los Angeles Seminar on Optical Tooling and Metal Forming Techniques

LOS ANGELES CHAPTER, American Society of Tool and Manufacturing Engineers staged a four-day seminar covering optical tooling and metal forming techniques at the Los Angeles Ambassador Hotel March 1-4.



DURING CREATIVE MANUFACTURING SEMINARS held by the American Society of Tool and Manufacturing Engineers, Charles E. Bradley, left, E. W. Bliss Co., discussed impact forming methods for maximum economy while P. P. Bergmann, sales manager, West Electric Castings, Inc., outlined alloy properties for castings and future developments in design, application and quality control of castings.

Presentation of papers was highlighted by displays of optical tooling and samples of super-strength alloys that had been formed into difficult and extreme contours.

Featured in optical tooling displays was the prototype of a new universal planizer developed by optical engineers of the Aero-Space Div., Boeing Airplane Co., Seattle, Washington. This device is a refinement of the alignment telescope used in positioning of jigs and fixturing used in production of airframes, missileframes, auto bodies and large structures requiring high accuracy.

The instrument is capable of locating objects in known positions along X, Y, and Z axes and erects an optical plane perpendicular to a reference line-of-sight and at a known distance from an indexing point.

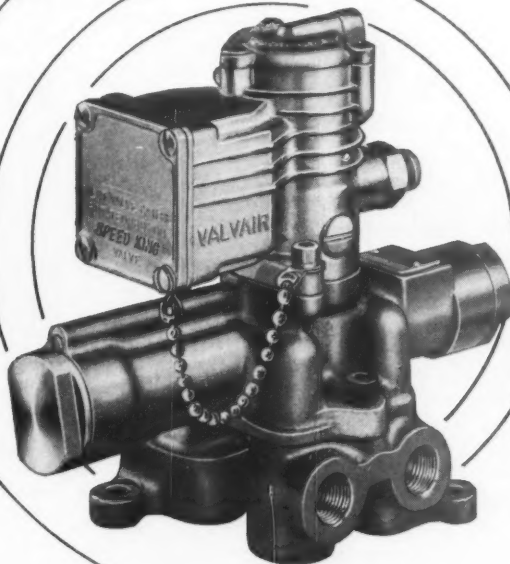
Optical equipment and systems from Keuffel & Esser Co. rounded out the displays.

Regional Conference on Lighting

BETWEEN 200 AND 300 lighting specialists will assemble at the Hollywood Roosevelt Hotel May 3-5 for the 1960 South Pacific Regional Conference of the Illuminating Engineering Society.

Conference General Chairman William Shalda, president

No coil burnout with **SPEED KING®**



...pilot operated control valves

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8111-2

... for more details, circle No. 12 on Reader Service Postcard

MEETINGS

(continued)

of Shalda Manufacturing Company Inc., reports plans for a program which will bring together many of the top lighting industry leaders in the nation. Two panel discussions are scheduled, one on "Lighting in 1975," and the other on "New Concepts on Roadway Lighting."

Metal Finishers Annual Convention Set for July 22 in Los Angeles

THE NATIONAL ASSOCIATION of Metal Finishers, will hold its annual meeting at the Statler-Hilton Hotel, Los Angeles, from Friday, July 22 to Monday, July 25, 1960. A post-convention program will also be held, featuring a trip to Disneyland, and junkets to Hawaii and Las Vegas.

Refractory Metals Conference

FINAL PLANS for the Refractory Metals Conference sponsored by the Los Angeles Chapter of the American Society for Metals have been announced by R. H. Gassner, Chief Metallurgist of El Segundo Division of Douglas Aircraft Company, and Chairman of the local ASM Educational Committee.

This Conference, which has aroused keen interest in technical circles due to the growing importance of the Refractory Metals in space and missile technology, is to be held at the beautiful Hotel Del Mar in Santa Monica on May 12 and 13, 1960. Heavy attendance is expected due to the problems facing industry today in providing economic, effective, and reliable materials that will withstand the rigorous conditions encountered in aerospace vehicles.

Material Handling Meeting

A DISCUSSION OF many new trends and developments in packaging and a technical session on pallets and skids provided an information-packed evening for members of Los Angeles Chapter, American Material Handling Society and guests during the March meeting at Roger Young Auditorium.

At conclusion of dinner, a three man panel, including Sherwood Hall, Select Pallet; Bill Carroll, Carroll Box and Pallet; and Bill Hunter, Hunter Woodworks, was led by chairman Don Ferguson in a discussion on merits of different materials used to make pallets and skids and the value of expendable pallets.

Under discussion was use of plywoods, so called Pacific Coast hardwoods, and use of Eastern hardwoods. Consensus was that material use was governed by application but that many buyers of "hardwood" pallets and skids were not careful to check on exact types of wood used in manufacture prior to purchase.

Leading off as the first of a three-man speaking team, Harold Kilmer, North American Aviation, told members of the early days in specialized packaging in the military field,



HAROLD KILMER, Missile Div., North American Aviation, Inc., described application of engineering principles to the science of packaging to Los Angeles chapter members and guests.



REPRESENTING THE FAIR SEX, Mrs. Olive Salembier, chairman of the AMHS Packaging Committee, introduces the topic, "New Trends in Packaging." Seated, left, Chuck Shibel, AMHS Secretary; Wally Brucks, Chapter vice president.



AT THE MIKE is Bill Carroll, Carroll Box and Pallet, giving pointers on use and maintenance of pallets. From left, standing, Don Ferguson, tech-session chairman; Sherwood Hall, Select Pallet; and Bill Hunter, Hunter Woodworks. Seated at left, W. B. Semco, AMHS president; right, Harold Kilmer, March speaker.

a time when few precedents had been set and specifications were met with inventive and often Rube Goldberg type solutions.

Backing up Kilmer was Howard Rohdin, Packaging Industries, Ltd., who spoke on use of blister packaging, and Frank Bannister, Polytron Corp., who told of new developments in use of foamed-in-place urethane as a packaging and shock absorbent medium.

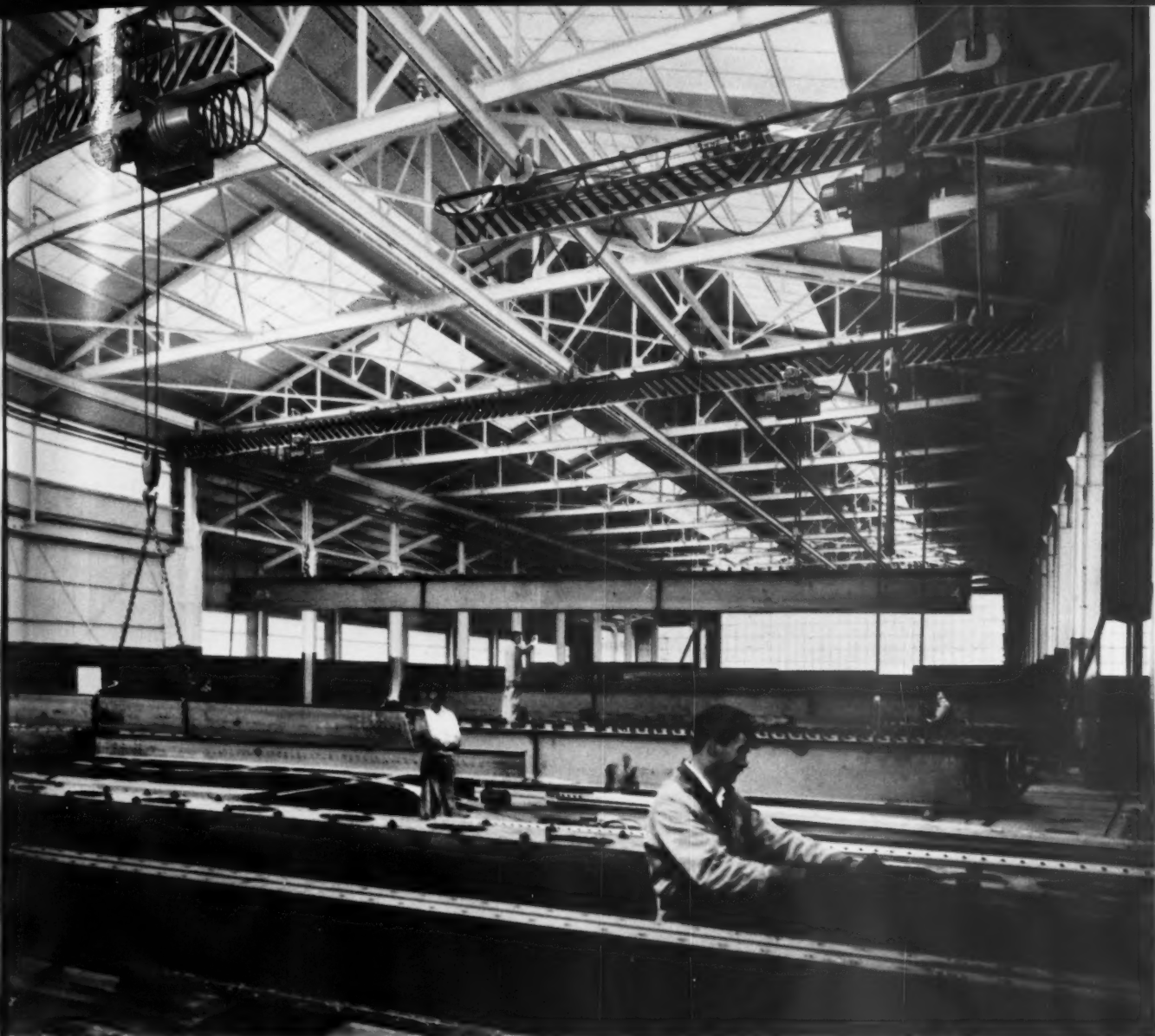


Photo: Courtesy Isaacson Iron Works Co., Seattle, Washington

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SPOTS HEAVY
STEEL ACCURATELY,
SAFELY**

This West Coast steel-fabricating company depends on P&H Balanced Design Hevi-Lift hoists to keep heavy steel beams and fabricated structures moving through its shops.

Note the unique method of installation which provides a high degree of flexibility . . . hoists can be used alone — or hoists can be teamed up to handle extra-long sections.

This company selected P&H Balanced Design Hevi-Lifts because they will stand up longer, under heavier duty cycles — with less maintenance — than any other hoist they could buy. Reason: Balanced Design means that every component has been balanced with every other component for maximum strength and performance characteristics.

If uninterrupted through-the-air material handling is important to you, too, then it will pay you to find out more about these new hoists. Send for bulletin H-55, Dept. 222, Harnischfeger Corporation, Milwaukee 46, Wis.

HARNISCHFEGER
Milwaukee 46, Wisconsin



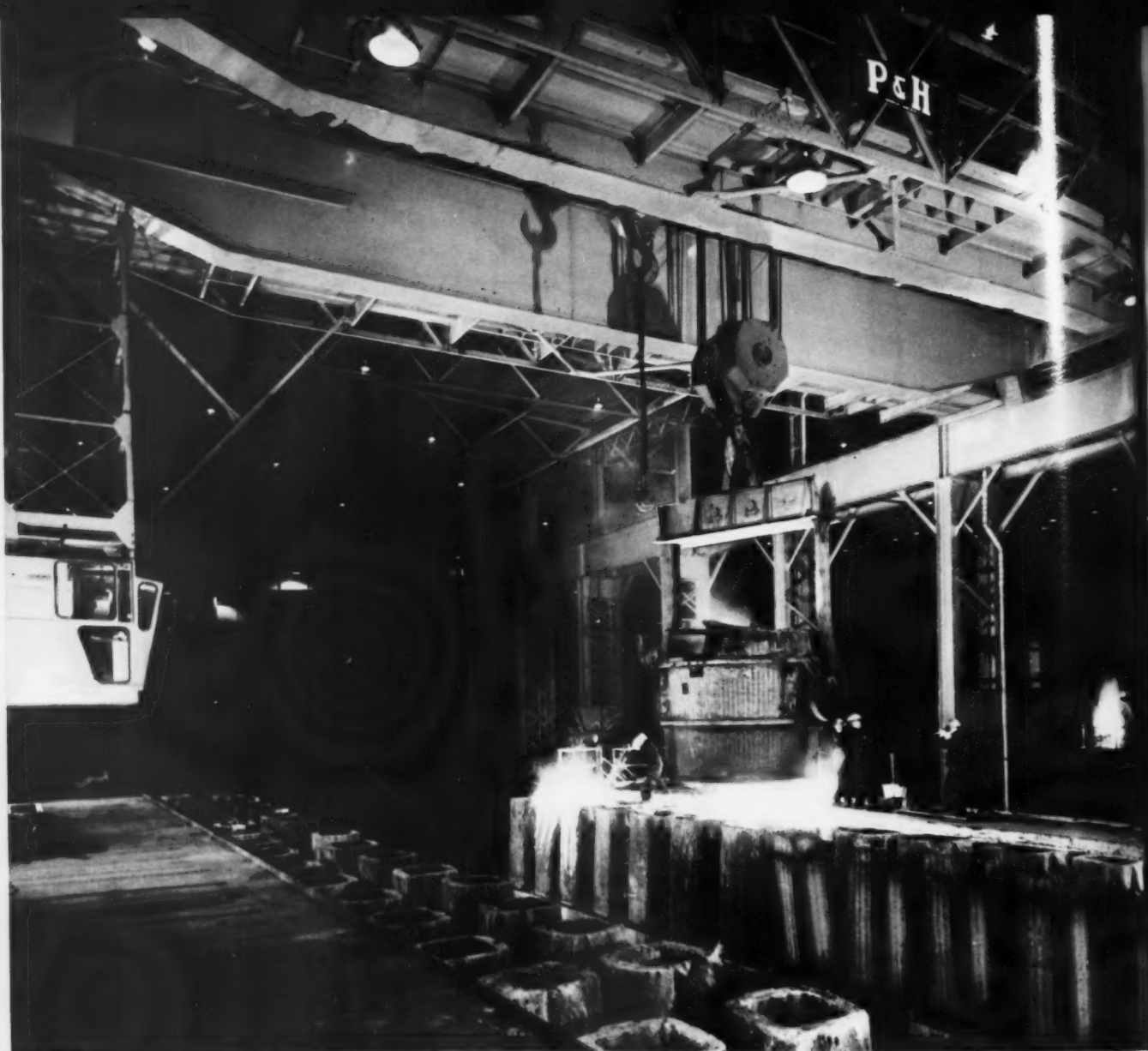


Photo courtesy Acme Steel Company, Riverdale, Illinois.

FOR EVERY APPLICATION, THERE'S ONE CRANE OUTSTANDING...

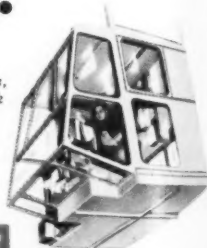
IN STEEL MILLS: This 100-ton P&H crane lifts, transports and "spots" tremendous loads of molten steel as surely and deftly as you handle a coffee cup.

P&H steel mill cranes perform tasks like this effortlessly and dependably because they are specifically designed for steel mill service . . . to handle massive loads, withstand searing heat, ignore frequent shock loads.

What's more, P&H carefully engineers every crane to meet specific job requirements . . . to consider all factors affecting performance. Special operating problems are taken in stride. Result: P&H cranes chalk up almost unbelievable service records month after month, year after year, decade after decade.

Isn't this the kind of performance you want, too? Write for bulletin C-42 to Dept. 120, Harnischfeger Corporation, Milwaukee 46, Wis.

P&H enclosed cabs have full-view safety glass windows, for unrestricted view of work area. Cabs can be heated and air conditioned where cold, heat, smoke or fumes render ordinary cabs uncomfortable or unsafe.



HARNISCHFEGER
Milwaukee 46, Wisconsin

3rd Western Regional Material Handling Show & Packaging Calvacade

May 11, 12, 13—Great Western Exhibit Center—Los Angeles



SHOW



SECTION

COMPLETE SHOW INFORMATION

For your convenience the editors of WESTERN INDUSTRY have compiled the information presented in this section. Those planning to visit the Show will find opposite this page their personal free admission ticket. Elsewhere in the section is information on Show activities, how to reach the Great Western Exhibit Center, a schedule of the technical sessions being held in conjunction with the Show,

alphabetical list of the firms exhibiting and their booth numbers, and highlights of some of the lines of equipment you will see at the show. This section has been keyed so that you can send for additional information on any of the lines of equipment mentioned through our convenient circle number postcard system.

A PERSONAL INVITATION

The editorial staff of WESTERN INDUSTRY would like to take this opportunity to invite their readers to visit them at Booth No. 146. We would like to meet you and

will welcome your comments and suggestions about the magazine. When visiting the Show, won't you stop by and say "hello."

SHOW INFORMATION

Doors of the Great Western Exhibit Hall will open May 11 to the largest showing of material handling and related equipment ever held west of Chicago, the Third Western Regional Material Handling Show, a three-day event sponsored by the Los Angeles Chapter, American Material Handling Society.

The biennial event, first shown in 1956, will be held in buildings and open air displays located at Santa Ana Freeway and Atlantic Blvd., Los Angeles. Show hours are 10 a.m. to 10 p.m. the first two days, 10 a.m. to 6 p.m. on May 13. A total of 325,000 invitations have been extended via pre-registration tickets distributed by Western Industry, exhibitors, technical societies and associations, or by direct mail.

More than 600 manufacturers and service firms will exhibit products valued at \$75 million. These exhibits will be seen by 35,000 representatives of the material handling industry. Today it is estimated that 25% of industrial direct labor output is beamed toward handling operations, that from 30% to 70% of total business costs, depending on the industry, are allotted to this activity.

Time and cost saving ideas may be gathered from this broad range of material handling equipment and demonstrations of receiving, shipping, transport, distribution and industrial packaging.

The Los Angeles Chapter AMHS this year welcomes the support of the Material Handling Equipment Distri-



HATS OFF TO HARDWORKING MEMBERS OF THE board of directors of the Los Angeles Chapter AMHS shown during a planning session for the Material Handling Show. From left, standing, Fred Bassick, Douglas; Roland Renaud, Certified Grocers; Roy Hill, Arrowhead Puritas; Alden Lane, MH show committeeman; Tom Brown, Electric Storage Battery; and Dick Sanford. Seated, left, Warren Burman, Hyster Co.; Chuck Shibel, SoCal Gas Co.; President Bud Semco and Wally Brucks, Oscar Mayer Packing Co.

butors Assn., and the Southern California Div., Society of Packaging and Handling Engineers.

As the result of SPHE efforts, the entire south section of the exhibit buildings will contain the most comprehensive industrial packaging display ever staged in Los Angeles.

Of national interest will be the SPHE Packaging and Handling Competition.

Industrial firms will compete in eight categories of industrial packaging; solid or corrugated fiber boxes, general, nailed wood boxes and crates, wirebound boxes and crates, cleated panel boxes, export packages, military packages and material handling.

Entries for this competition are acceptable until May 8 and application forms are still available from the SPHE at P.O. Box 22082, Los Angeles 22, Calif.

More than 80 technical societies have been invited to attend or participate and a unique "Society Center" has been setup to pass out information regarding these groups to interested visitors.

In cooperation with the Society of Safety Engineers, the AMHS will present its annual Fork Truck Rodeo, an event that has made major contributions to improved safety and efficiency of fork truck operation.

A two-day technical conference on May 10-11 has been arranged jointly by the AMHS and SPHE and will be presented in the new Chrysler Corp. facility, 1111 N. Brookhurst Ave., Anaheim, Calif. (See WI show section for complete program and timetable).

Conference fees are \$15 for one day, \$25.00 for both sessions. Tickets are available from the Chapter office, 2807 Sunset Blvd., Los Angeles, Calif., Robert H. Braun, Jr., at RAYmond 3-6381 or Wally Burman, at RAYmond 3-6255.

To help prevent visitors from becoming footsore, a tramway will circle the fairgrounds picking up people and dropping them in the desired exhibit areas.

To help service exhibitors, the Addressograph-Multi-graph Corp. will compile a complete list of visitors to the



NO SALES RESISTANCE—Lari Laine, Queen of the 3rd Western Material Handling Show scheduled for May 11, 12, 13 at the Great Western Exhibit Center, Los Angeles, meets no sales resistance handing an admission ticket to Pat Pafford, of Brown-Bevis-Industrial Equipment Co. Your free admission ticket may be found at the start of the WESTERN INDUSTRY Show Section in this issue.

three-day show, will print them and distribute the booklet free of charge to all exhibitors.

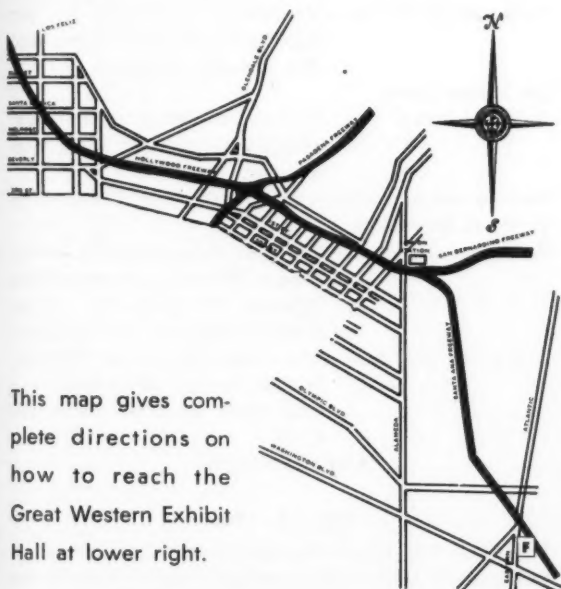
Entry-way to the exhibit area will be through a 60 by 40 by 62-ft. high structure built from racking by the Sturdi-Bilt Div., Union Asbestos Co.

Visitors will pass under this impressive structure on their way to the registration area.

LOCATION

The exhibit hall is approached by either freeway or surface streets, (see map below). Most direct route from the Los Angeles civic center is to take the Santa Ana Freeway to the Atlantic Blvd. off ramp.

For those wanting to skirt freeway traffic in trips from local airports to the Great Western Exhibit area, helicopter service will be available for scheduled flights. Landings will be made directly on the exhibit grounds at 2120 S. Eastern Ave.



This map gives complete directions on how to reach the Great Western Exhibit Hall at lower right.

In addition to commuter service, helicopters will offer sightseeing flights over Los Angeles, also departing from the exhibit area.

Ample parking is available on the show grounds. Food and refreshments will be served during show hours, 10 a.m. to 10 p.m. Wednesday and Thursday May 11, 12, and 10 a.m. to 6 p.m., Friday May 13.

FORK TRUCK RODEO

The sight of fork trucks being quickly and skillfully maneuvered through tight squeezes and backbreaking turns will again greet visitors to the Western Regional Material Handling Show May 11-12-13.

Competition at the Great Western Exhibit Hall will begin 9 a.m. each day and end at 4 p.m. with entries expected from more than 130 Southland firms. Winners will share in cash awards and trophies.



PUTTING A FINGER ON STARTING DATE of AMHS Fork Truck Rodeo, May 11 at Great Western Exhibit Hall, is Roland Renaud, Rodeo chairman, as Bob Braun, Jr., left, and Marshall Cowden and Warren Burman look on. More than 130 contestants are expected.

Called, appropriately enough, The Fork Truck Rodeo, it is under sponsorship of the Los Angeles Chapter AMHS with members of the Safety Engineers Society acting as judges.

Planning a course that will provide viewer enjoyment and tough competition are Roland Renaud, chairman, Certified Grocers; Bob Braun, Jr., Robert H. Braun Co.; Marshall Cowden, Irving C. King Co.; and Warren Burman Hyster Co.

Trucks used in the rodeo will be furnished by MH equipment dealers in the Los Angeles area. Deadline for entry is April 15 and entry forms and fee information is available from Byron Perkins & Assoc., 2215 S. Hill St., Los Angeles.



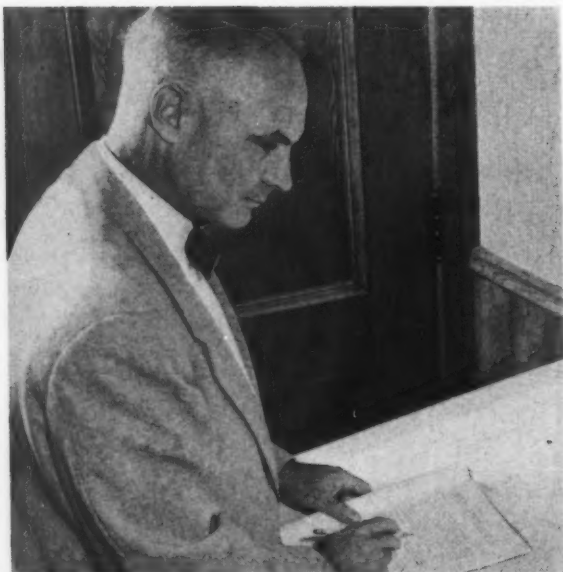
EYES ON THE ROAD, SONI—Driver Seymour Claes has a distracting few moments as Lari Laine, Queen of the 3rd Western Material Handling Show scoots by.



The American Material Handling Society, Los Angeles Chapter, takes great pride and pleasure in presenting the 3rd. Western Regional Material Handling Show, May 11-12-13, 1960.

We urge your attendance and assure you everything will be done by our society, with the support of the entire national organization, to make your visit a huge success.

W. B. Semco, President,
Los Angeles Chapter



The Southern California Chapter of the Society of Packaging and Handling Engineers endorses the 3rd. Western, Regional Material Handling Show, May 11-12-13, 1960, and has offered full cooperation toward developing the packaging section of the show.

Noble Jones, President,
Los Angeles Chapter

TECHNICAL SESSIONS

**Program for Joint American Material Handling Society-
Society of Packaging and Handling Engineers May 10-11**

Chrysler Corp. Training Center

1111 N. Brookhurst Ave.

Anaheim, Calif.

Conference Theme:

Integration of Material Handling and Packaging

May 10, 1960

8:00 a.m.- 9:00 a.m.—Registration and Coffee Hour

9:00 a.m.- 9:10 a.m.—Welcoming message to conference from W. B. Semco, President, Los Angeles Chapter, AMHS.

9:10 a.m.- 9:15 a.m.—Introduction of speakers by Henry Cooper, technical conference general chairman.

9:15 a.m.-10:15 a.m.—“Overhaul It-Replace It,” Ben Handwerker, Convair, San Diego, Div. General Dynamics.

Ten Minute Break

9:25 a.m.-Noon

“Freight by Air,” Sam Lamar, Douglas Aircraft Co., Santa Monica, Div.

Thirty minute intermission and tour through Chrysler Corp. exhibits at Brookhurst Ave. facility.

12:30 p.m.- 2:15 p.m.—David R. Miller, luncheon speaker Project Manager, Daniel, Mann, Johnson, Mendenhall, “Mass Rapid Transit for Los Angeles.”

2:15 p.m.- 4:00 p.m.—“Put Snap Into Order Picking,” Nelson Goodson, Brunswick Drug Co.; Matt Paulson, Jerseymaid Corp.

ADJOURNMENT

May 11, 1960

8:00 a.m.- 9:00 a.m.—Registration and Coffee Hour

9:00 a.m.- 9:10 a.m.—Welcoming message to conference from Noble Jones, President, Los Angeles Chapter, SPHE.

9:10 a.m.- 9:15 a.m.—Introduction of speakers by Harper Welton, North American Aviation, Inc.

9:15 a.m.-10:15 a.m.—“Palletize—Why?,” John Bruce, Bruce & Garroway.

Ten Minute Break

10:25 a.m.-Noon

“Use That Space, Save Those Dollars.”

Thirty minute intermission and informational program under SPHE sponsorship.

12:30 p.m.- 2:15 p.m.—Ken Brown, luncheon speaker Space Technology Labs

“Packaging for the Space Age”

2:15 p.m.- 4:00 p.m.—“Packaged for Better Handling,”

Col. R. R. Gray, Chief, Material Handling Div., Air Force AMC. and Ralph A. O’Riley, General Motors Corp.

ADJOURNMENT

LIST OF EXHIBITORS

EXHIBITOR	BOOTH NO.	EXHIBITOR	BOOTH NO.
Abernathy & Co.	216, 223	Industrial News	214
Addressograph-Multigraph Corp.	835	Irving G. King Co.	604, 608
Aerol Co., Inc.	107	J. P. Kinney Co.	704, 708-709, 0-20
Allied Manufacturing Co.	236	La Deau Manufacturing Co.	112-113, Part of 114
Clark Aiken Co.	237	R. L. Lison Co.	834
Alemite Company	811	Lockheed-Brown Assoc.	924
Allied Mfg. & Sales Co.	236	Lyon Van & Storage	206
Allis-Chalmers Mfg. Co.	311	McDermott & Greene	151
American Airlines	1005 and 1006	McClintock Manufacturing Co.	931-932
American Floor Machine Co.	843	McKinley Equipment Corp.	101-103
American Pamcor	250	Martin Bros. Container Co.	1203
Andrews Hardware & Metal Co.	817, 818	Martin Decker Corp.	517
Apex Welding & Fabricating Corp.	402	Massey-Ferguson Corp.	712-714
Automatic Transportation Co.	224-231	Mathews Conveyor Co.	208
Banner Metals	702	Mifran Company	122
Barrett-Cravens Co.	609	B. B. Miller Co.	516
Bassick Co.	815	Mobilift Division	805-806, 8-8-810
A. J. Bayer Co.	104-106	Stanley E. Morris Co.	515
Better Packages, Inc.	930	Modern Metals	217
W. T. Billard Company	706	Motorola C & E, Inc.	238, 209
Bivens Conveyor Co.	123-6	Motor Generator Corp.	137
Blair Martin Co.	108-111, 204-206	Nash-Hammond, Inc.	136
Bowman Company	139-140	National Vulcanized Fibre Co.	313
Robt. H. Braun Co.	129-132, 309, 408-414, 406-407, Area A	National Wooden Pallet Mfg. Assn.	150
Brown-Bevis Industrial Equip.	0-9	Navan Products, Inc.	905-906
H. L. Bushman Co., Inc.	149	Dept. of Navy	Special Area
C & D Batteries	138	NorAir Div., Northrop Corp.	403-4
Cal-Nail, Inc.	1204	North American Equipment Co.	802-803
Cal-State Distributors, Inc.	306	M. Neushul & Co.	501, 518
M. E. Canfield Co.	601-603, 610-612, 613-614	Pacific Factory	222
Cascade Mfg. Co.	828-829	Personal Products Corp. (Div. of Cel-Fibe Corp.)	1209
J. I. Case Co.	Special Area, Outside	Petrolane Gas Service, Inc.	804
Casey-Metcalf Machinery Co., Inc.	0-8	Polyken Industrial Tapes	1205
Carroll's Box & Pallet Co.	839	Power Line Sales, Inc.	135
Chainveyor Corporation	—	Geo. M. Prescott Co.	310
Champ Corporation	0-3	Rack Engineering Co. of Calif. Inc.	309
Clarke Floor Machine Co.	807	Rapids-Standard Co., Inc.	305
Competition Motors Distributors	Special Area	Ross-Cook, Inc.	506
Colson Equip. & Supply Co.	304 and 312	Ryder Truck Rental, Div. of Ryder Systems	833
Earl S. Condon Company	901	Saginaw Products Corp.	837
Continental Motors Corp.	705	Schooler Mfg. Co.	1009
Coseco-Bag-O-Matic Corp.	1218	Schreiber Co.	120-1
Cushman Motors	840	Select Pallet Co.	Part of 116-117
Bages TV Corp.	830	Shelley Company	1213
Darnell Corp., Ltd.	816	James E. Simkins	838
Davis Material Handling Co.	306	Specification Packaging Engr. Corp.	933
Deluxe Metal Products Co.	701	Speedrack	141
W. C. Dillon Scale Co.	—	Speedry Products of So. Calif.	145
Douglas Aircraft Co.	1019	Spotnails of So. Calif.	904
Easterday Supply Co.	814	Standard Conveyor	152
Thos. A. Edison Industries	314	The Stanley Works Co.	503-504
Electric Marketeer	819	Storage Rack Systems, Inc.	403-404
Encyclopedia Americana	142	T & S Equipment Co.	801
Encyclopedia Britannica	248	Taylor Dunn Mfg. Co.	832
Equipment Engineering Service	147-148	Tier Rack Corp.	Part of 114, 115, 116
Exide Batteries	239	Thermofax Corp.	813
Equipment and Materials Reporter	841	Towmotor Corp.	508
Faultless Caster Corp.	207	Union Wire Rope Co.	303
Frontier Manufacturing Co.	831	United Products Co.	232
George Von Opel Corp.	711	U. S. Steel Supply Co., Div. of U. S. Steel	1001-1002
General Fireproofing	240-7	Utilities Supply Co.	703, 710
Gould National Batteries	502	Vanguard Manufacturing Co.	708
Great Books of the Western World	213	Watts King Company	201-202
Green-Penny Co.	510	Weber Marking Systems, Inc.	707
H. M. Greenfield & Sons	118-9	Wedglock Corporation	301-302
Greer Hydraulics, Inc.	212	West Coast Plastics Distributors	1202
Bernard Gloekler Co.	307	Western Industry Magazine	146
General Plastics	836	Western Body & Hoist Co.	0-13
Hadco Engineering Company	233-234	Western Material Handling Magazine	144
Handling Systems of America	210-211	Wettstein Nowell & Johnson, Inc.	Special Area
Hart-Cobb-Carley Co.	401	Weyerhaeuser Timber Co.	1210
Hollywood Plastics, Inc.	405	Wilshire Foam Products	1201
Hyster Co.	605-607	Woodford Mfg. Co.	235
Industrial Battery Engr. Co.	812	Yale & Towne Mfg. Co.	820-827, Area B



AUTOMATIC TRANSPORTATION'S new radio controlled stand-up, end control Docker called Mr. Otto Matic. Other new models shown for first time are Transveyor "Crab" truck and Skylift model ELF. Demonstrations will be held every hour at Booth No. 224.



YALE K58 electric sit-down type fork lift truck with Triple Mast, actuated carbon pile speed control, high lift speed. One of a number of lift trucks by Yale & Towne Mfg. Co. shown at Booth 820.



CLARKLIFT 50 with rotating roll clamp, one of nine lift trucks to see at Clark booth. Also shown will be towing tractor and four attachments. Attachments operate from console and function independently of machines. Visit Booth No. 129.

EQUIPMENT

Here are highlights on some of the many different products you will see at the Show. For your convenience equipment lines are keyed with numbers. If you desire to receive additional information on any of the items please circle the corresponding number on the postcard elsewhere in this issue and mail it to WESTERN INDUSTRY.

TRUCKS & MOBILE EQUIPMENT

Allis-Chalmers is displaying their new "Hefty" FTB30-24 fork lift truck, the FT40-24 4000 lb. fork lift truck with a 24 in. load center and a FTB30-15 3000 lb. fork lift truck with a cotton clamp. Booth No. 311. Circle No. 151.

Automatic Transportation Co. is showing many new models of electric-driven industrial trucks for the first time. Three new models are featured: the Transveyor "Crab" truck, which can traverse in any direction, at any angle, with any shaped load; the Skylift model ELF with a new design in truck control that saves up to 60% of battery power; Robot operated, radio controlled Docker. Booth No. 224. Circle No. 150.

Clark Equipment Co. is showing nine fork lift trucks, a towing tractor of 22,500 lbs. drawbar pull, and four attachments. Fork lift trucks include: narrow aisle reach truck of 4000 lb. capacity; electric Clarklift, 2000 lb. capacity; electric rider type straddle stacker; electric pallet truck; gas Utilitrac, 6000 lb. capacity; and four gas Clarklifts from 4000 lb. to 15,000 lb. capacity. Booth No. 129. Circle No. 152.

Lewis-Shepard is showing a full line of trucks. Of special interest are three new models: Sitdrive model C electric fork lift truck with drive system that allows exact load spotting; HPF hand pallet truck with high pressure hydraulic foot lift pump; and a new 24 volt model MN narrow aisle reach truck. Booth No. 601. Circle No. 154.

Hyster Company is represented by a complete line of fork lift trucks from 2000 to 20,000 lb. capacity. Trucks include Challenger 20, 40, 50, 180 and 200. A Hyster Challenger 40 has provided rapid movement of aluminum extrusions and glass panes to the production line, reduced handling costs and saved time at Nudor Manufacturing Corp., North Hollywood. Booth No. 605. Circle No. 153.

Towmotor Corporation features an all-new fork lift truck called the "Naro-Aisle-Stack" model 590. It will be demonstrated at the Show to display stacking and pick-up operations within a 6 ft aisle. Also shown will be the new extra low profile trucks in the "Van Stack" series that are less than 6 ft. high with overhead guard attachment. The exclusive Tomostatic Drive will be demonstrated at the display. Booth No. 508. Circle No. 155.

Yale & Towne Mfg. Co. is planning to display a complete line of fork lift trucks including gasoline, electric, and L P gas powered models. Of interest are: the K58 electric sit-down type fork lift truck with Triple Mast, mechanically actuated carbon pile speed control, low compact design in 2000 and 3000 lb. capacity; G54-30 gasoline or L P-gas powered sit-down type in 3000, 4000 and 5000 lb. capacity, with short turning radius; and K47-2 electric

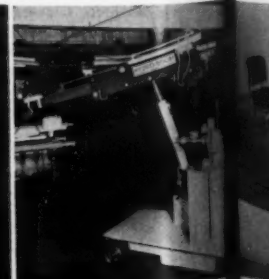
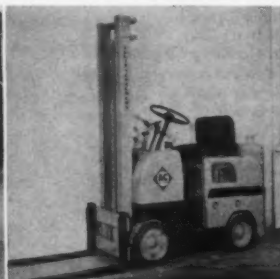
LEFT—CUSHMAN one passenger industrial electric vehicle for plant supervision and movement of supplies. Of interest at Booth No. 840 is new Truckster line.

RIGHT—ALLIS CHALMERS Model FTB30-24 fork lift truck. Also new are 4000 and 3000 lb. models. Booth No. 311

BELOW—CLARKE FLOOR MACHINE CO. new heavy duty power sweeper with 15 hp, 4 cyl., water cooled Continental engine. Sweeping swath is 48 in. with one side broom, with two swath is 58 in. Sweeper may be seen at Booth No. 807.

LEFT—YALE K47-20 electric stand-up type fork lift truck with compact end control design, optional two speed. Booth No. 820.

RIGHT—VANGUARD Hydro-Boom Model 115 in battery or hand operated models. Also shown at Booth No. 708 are Shop Van and Powr-Wheel.





HYSTER SpaceSaver 50 skims giant tire from stack at General Tire warehouse. Flat stacking using lift truck increased warehouse capacity substantially. This 5000 lb. capacity model is one of a complete line shown at Booth No. 605.



TOWMOTOR NARO-AISLE-STACK Model 590 first showing in Los Angeles area of unit that stacks in a 6 ft. aisle. Entire front end assembly of unit pivots 180 degrees. Also features include a new drive and lifting speed of 70 ft. per min. See Booth No. 508.



PAYLOADER MODEL H-25, Frank G. Hough Co. shown at Sumner Iron Works, Lowell, Wash. used in handling sand, formerly hauled by wheelbarrow. By eliminating hand handling equipment brought efficiency and productivity to operation. Booth No. 0-9

stand-up type with low operator step, interlocking I beam mast construction, and compact end-control design. Booth No. 820. Circle No. 156.

Car Shunter Co. is featuring a single wheel, one man operated, unit to move freight cars with total weights of up to 100 tons at speeds up to normal walking speeds. Has three speeds forward and 6 hp engine. Booth to be assigned. Circle No. 157.

Clarke Floor Machine Co. is exhibiting a line of power sweepers. Of interest is the new heavy duty 36 in. rider type sweeper with 15 hp. 4 cyl. Continental engine, that may be equipped with one or two optional side brooms. Booth No. 807. Circle No. 158.

Cushman Motors is showing its line of light hauling vehicles and personnel carriers for industrial use. Special emphasis is placed on the new gas 780 Truckster, that can haul an 800 lb. payload at under a penny a mile; Electric Truckster that hauls ½ ton payload up to 50 miles per charge. Booth No. 840. Circle No. 159.

Drott Mfg. Corp. will feature the new 20RM2 Go-Devil powered mobile crane with hydraulic control, 2000 lb. capacity, designed for in-plant and yard hauling of material not readily adaptable for pallet handling. Booth No. 708. Circle No. 160.

Frank G. Hough Co. is showing their Payloader model H-25, powered tractor with loader that has cut handling time and costs at Simpson Paper Company, Lowell, Washington by handling old newspapers. With the H-25 one man in a few minutes can do what a four man crew formerly needed hours to accomplish. Booth No. 0-9. Circle No. 161.

Rol-Away Truck Mfg. Co. is presenting a new flat bed truck convertible into a number of variations by adding accessories. A feature is the Rol-Guide wheel located in the center for greater truck maneuverability by operator. Booth No. 120. Circle No. 163.

Uhrden, Inc. will exhibit its complete line of Tubar hydraulic floor cranes with new "tilt back" mast, built-in extension booms, double action variable speed pumps. Also shown will be a 2000 lb. box hydraulic dumper. Booth No. 704. Circle No. 164.

Vanguard Mfg. Co. is showing a line of powered mobile units that include: boom trucks; floor cranes; shop van for overhead repair; and an electric propulsion unit, Powr-Wheel for use with hand trucks, lifts etc. Booth No. 708. Circle No. 165.

BATTERIES & GENERATORS

C & D Batteries exhibit will feature a line of industrial electric truck batteries and automatic Silicon Chargers. These chargers are compact, portable, fully automatic and may be mounted on top of battery for charging. Booth No. 138. Circle No. 166.

Gould-National Batteries, Inc. will show its new Silconic battery plate designed to lengthen battery life 10-25%. All models of the Gould Thirty, Kathanode and Super Dreadnaught line are available with the new grid. Booth No. 502. Circle No. 167.

Industrial Battery Engineering, Inc. is displaying its line of CVC chargers, rectifiers and batteries. Chargers feature full magnetic control and automatic cell equalizer; rectifiers are built with automatic control and Flotay cell equal-

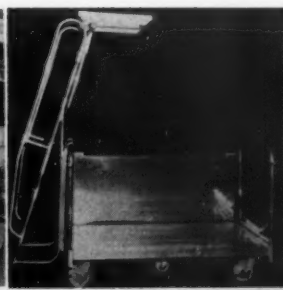
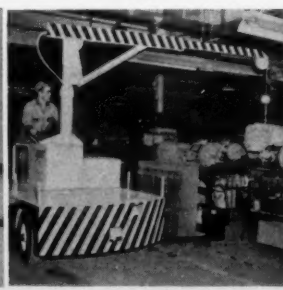
LEFT—LEWIS SHEPARD new sit drive model C fork lift truck available in 30 different models. Every type of truck manufactured by L-S can be seen at Booth No. 601.

RIGHT—DROTT new 20RM2 Go-Devil crane with capacity of 2000 lbs. Boom rotates 360 deg., elevates 70 deg. See it at Booth No. 708.

BELOW—ROL-AWAY flat bed hand truck with pipe cradles, top bar, shelf folded down and 5-step ladder. Trucks come in basic unit and with such accessories as needed. Unit above is one of the variations. To see these trucks visit Booth No. 120.

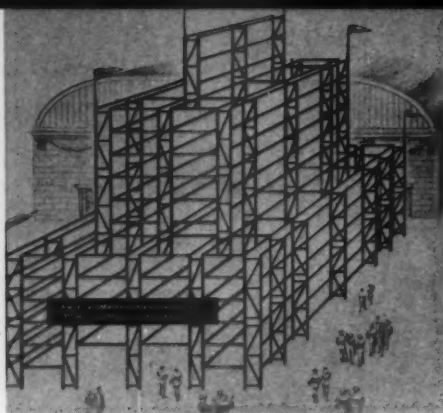
LEFT—TUBAR CRANE Model TC 1, with 2000 lb cap. features new tilt back mast. Also shown at Booth No. 704 is Hydraulic 2000 lb. box dumper.

RIGHT—CAR SHUNTER, single wheel, from Car Shunter Co. moves freight car weights up to 100 tons. Booth not yet assigned.





STANDARD CONVEYOR new magnetic memory system for automatic distribution and sorting of items. At dispatch station a push button controls future designation of item placed on conveyor. Equipment is new to the West Coast. See it at Booth No. 152.



STURDI-BILT Div., Union Asbestos & Rubber Co. is erecting this entrance structure at the Show. "Skyscraper" will be assembled without tools, welding, nuts, or special labor, and is composed of standard adjustable storage rack components. Booth No. 129.



MAGIC-POLE universal gantry lifts up to four tons to a six foot height. Useful for numerous different applications not requiring more automatic equipment the gantry can be moved as needed. See item at Booth No. 515.

izer; batteries are built for Western climatic conditions. Booth No. 812. Circle No. 168.

Motor Generator Corporation is showing their line of single circuit chargers. Of interest is model 669-6-1 Automatic Battery Charger that features as automatic; charging rate control; battery cut-off when charged; shutdown when charge completed; shutdown when power failure; restart when power resumed. Booth No. 137. Circle No. 169.

CONVEYORS, HOISTS, LIFTS

Alvey Conveyor Mfg. Co. will build for Show demonstrations a conveyor exhibit designed to automatically dispatch cartons in accordance with pre-determined code marks on the side of each package. Booth No. 408. Circle No. 170.

Chainveyor Corp. will demonstrate an actual overhead conveyor featuring power and free application with switches and frogs plus automatic selection carriers. Booth No. 220. Circle No. 201.

Mathews Conveyor Co. will display a new portable belt conveyor and other portable equipment. Shown will be a new concept in conveying called Reciprocating Gravity Conveyor. Also different types of rollers will be displayed. Booth No. 208. Circle No. 202.

Standard Conveyor Co. will show a demonstration of their Magnetic Memory System, a method of automatic selectivity compatible with most types of conveyors. Parcels or other items may now be automatically distributed throughout a conveyor system as desired with no physical contact. Booth No. 152. Circle No. 171.

Griphoist, Inc. will display a line of portable multi-purpose hoists or pull units. Standard unit weighs 42 lbs., rated at 3300 lbs. single line pull. New T-35 unit weighs

60 lbs., rated at 3 tons. Booth No. 216. Circle No. 172.

Manning, Maxwell & Moore's line of Budgit Portable Electric Hoists will be on display. These hoists are from 1/4 to 2 ton capacities and are available with either push button or pull card controls. Booth No. 613. Circle No. 174.

American Dockbridge, Inc. will display their automatic loading ramp that automatically adjusts to receive high or low bed trucks without loss of dock area. Booth No. 129. Circle No. 175.

American Scissor Lift and Pantograph Lift Tables will be shown. These tables have capacities from 1000 to 24,000 lbs. and are used to feed lift and accumulate a variety of materials. Booth No. 515. Circle No. 176.

T & S Equipment Co. is displaying a line of automatic mechanical dockboards, called Docklevlers, that as a truck backs in, automatically raise and then descend to truck bed level. Booth No. 801. Circle No. 177.

RACKS

Acme Steel Co. AIM Brand Slotted Angle will be shown. By use of this item racks and platforms of all types can be constructed. Booth No. 129. Circle No. 178.

De Luxe Metal Products Co. will have on display bolt-less steel shelving, open shelf filing equipment and storage and combination cabinets. Circle No. 179.

Sturdi-Bilt is constructing a rack "skyscraper" at the Show entrance, assembled from their adjustable storage rack components without tools. The frame and safety bars of the rack system are locked together by a Floating Wedge Lock. Booth No. 129. Circle No. 180.

Speedrack is showing their adjustable storage rack that needs no nuts, bolts or tools to assemble and can be used

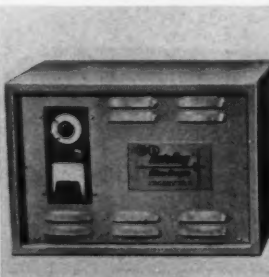
LEFT—AMERICAN Scissor Lift and Pantograph Lift. Tables feed, lift, accumulate variety of materials. See them at Booth No. 515

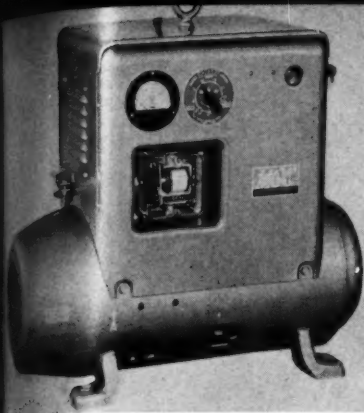
RIGHT—DRUM ARM by Little Giant Products. Model shown is useful for narrow aisle stacking. Booth No. 216

BELOW—T & S DOCKLEVLERS set in battery to speed up loading and unloading at an auto assembly plant. Units automatically adjust to truck bed level, and allow immediate unloading. See Booth No. 801

LEFT—C&D BATTERIES AutoReg Automatic Sili-con Charger. Also to be shown at Booth No. 138 are a line of batteries for electrical trucks.

RIGHT—CRANE SCALE by Martin Decker. Remote indicating scale gives accurate readings. See Booth No. 517





MOTOR GENERATOR CORP. Model 699-6-1 automatic battery charger. Charger can be dialed to automatically charge a battery as desired and when finished shuts off. Available in several models for different battery types. Booth No. 137.



TIER-RACK pallet stacking frames used to provide more storage space in your plant. Item is composed of two interchangeable metal frames that snap onto pallets and convert them into portable racks. To see this equipment visit Booth No. 116.



MOTOROLA closed circuit television camera weighs 12 pounds comes in four versions, rugged construction for industrial use. Also being exhibited is a radio paging system for immediate selective contact with plant personnel. Booth No. 209.

to store such items as drums, pallets, bins or skids. Booth No. 141. Circle No. 182.

HOIST & TRUCK ACCESSORIES

Cambridge Wire Cloth Co. will have on display its line of woven wire slings, that are strong yet do not damage the load. Available in all sizes shapes and weights. Booth No. 515. Circle No. 184.

Martin Decker Corp. is showing its Remote Indicating Crane Scale. This unit is used for overhead weighing of loads yet the indicator remains on the floor for ease of reading. Booth No. 517. Circle No. 186.

Motorola, Inc. is exhibiting closed circuit TV equipment. At another booth they will display low frequency paging equipment, plus VHF equipment. Both items have important industrial applications in the material handling field. Booth No. 209. Circle No. 198.

Union Wire Rope will display Tuffy braided wire rope slings in 13 different types. A part of the display is a model overhead crane using scales to show comparative weight loads when lifting at fleet angles of 30, 45, 60 degrees. Booth No. 303. Circle No. 187.

Faultless Caster Corp. will feature a line of specialty casters and military casters. Of interest is the 18-10X4, a dual wheel, self aligning caster designed for use on heavy duty transporting dollies. It has a load rating of 2500 lbs. at 10 mph. Booth No. 207. Circle No. 188.

Little Giant Products, Inc. will have on display three attachments, Kughler Universal Drum Arms, extremely versatile in handling and manipulating drums; Grip-O-Matic, an inexpensive attachment that picks up every type of drum; Grip-O-Lift Arms, that are multipurpose and

handle unit loads with or without pallets. Booth No. 216. Circle No. 189.

BOXES & PALLETS

Carroll Box & Pallet Co. will show their line of Dura-Block bolted pallets that weigh 30% to 70% less and have extremely low maintenance cost. Booth No. 839. Circle No. 190.

G. B. Lewis Co. is displaying a line of PolyLewton stackable pans for industrial handling. Of note is a new container developed especially for use in food handling field. Booth No. 604. Circle No. 192.

National Wooden Pallet Mfgs. Association is showing the latest developments to wooden pallet and pallet containers, both warehouse and expendable types. Included are three new pallet designs never exhibited before. Two show new fastening techniques and one occupies only half as much space in warehousing as the standard pallet. Booth No. 150. Circle No. 193.

PACKAGING

Specification Packaging Engineering Corp. will show their new Sentinel Blister Heat Sealing Machines. Of particular interest will be a demonstration of the Blisto-Matic machine in hermetically sealing in transparent blister packs under production conditions. Booth No. 933. Circle No. 197.

Better Packages, Inc. are exhibiting their line of packaging machines including, the Codetaper that prints tape and seals in one operation, and a new gummed tape machine that measures, moistens, cuts and delivers tape as called for. Booth No. 930. Circle No. 195.

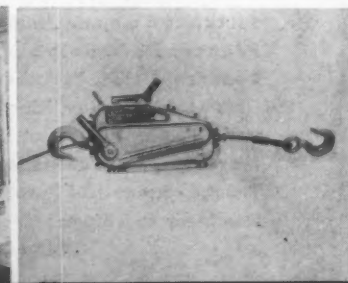
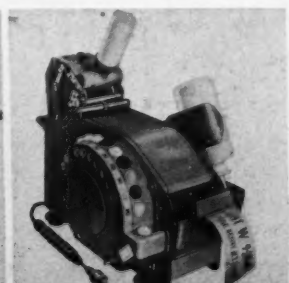
LEFT—NEW SENTINEL blister heat sealing machine for sealing packages. First showing on West Coast of new Blisto-Matic by Specification Packaging Engineering. Booth No. 933.

RIGHT—ELECTRIC CODETAPER by Better Packages, Inc. measures, feeds, moistens and prints tape. Booth No. 930

BELOW—CVC CHARGER by Industrial Battery Engineering Unit is fully automatic, completely contained, moisture proof and equipped with automatic cell equalizer. Chargers, rectifiers and batteries may be seen at the Show.

LEFT—GOULD Kathanode battery being placed in high-lift platform truck. Batteries are now available with new silicic plate giving up to 25% longer life. Booth No. 502

RIGHT—GRIPHOIST hoist or pull unit a portable machine for lifting or pulling. See Booth No. 216. Heavy duty model also shown.



Yale tractor shovels

are setting new performance standards wherever they are used. Compare Yale power against any other in its field. Only Yale gives you a torque converter and fully automatic transmission with a 72-hp. 6-cylinder engine. Compare Yale action! 2500-lb. carry capacity bucket. Exclusive 45° bucket tipback for faster loading and minimum spillage. 6 ft. dumping clearance—highest in the field. Compare Yale safety! Safety-curve lifting members never rise alongside the operator. Front and rear working lights for additional security. Compare Yale design! Rugged, simplified, more efficient. Brakes and electrical system sealed. 10-ply tires. Many parts interchangeable with Yale Gas trucks. Compare these features with a demonstration in your own plant. See why you'll save time and money.

For full information, or a demonstration, call your Yale representative, or send for free brochure #5255A to The Yale & Towne Mfg. Co., Materials Handling Div., Phila. 15, Pa., Dept. YT-4.

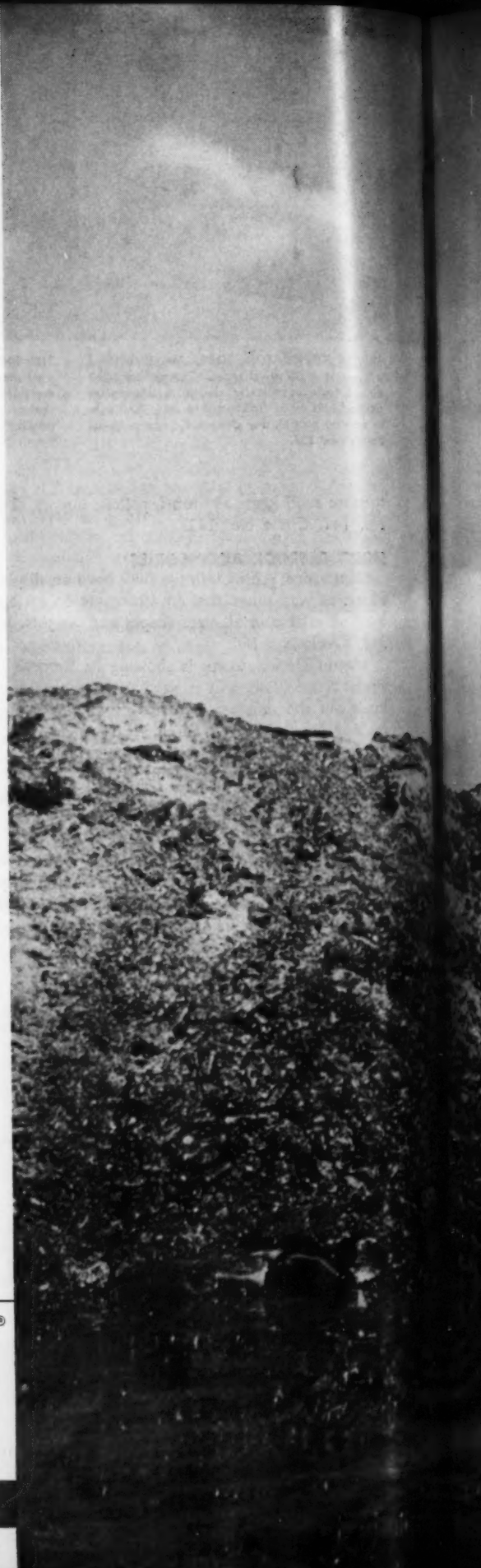
Yale Materials Handling Division, a Division of The Yale & Towne Manufacturing Company. Manufacturing Plants: Philadelphia, Pa., San Leandro, Calif., Forrest City, Ark. Products: Gasoline, Electric, Diesel and LP-Gas Industrial Lift Trucks Worksavers • Warehouse • Hand Trucks • Industrial Tractor Shovels Hand, Air and Electric Hoists.

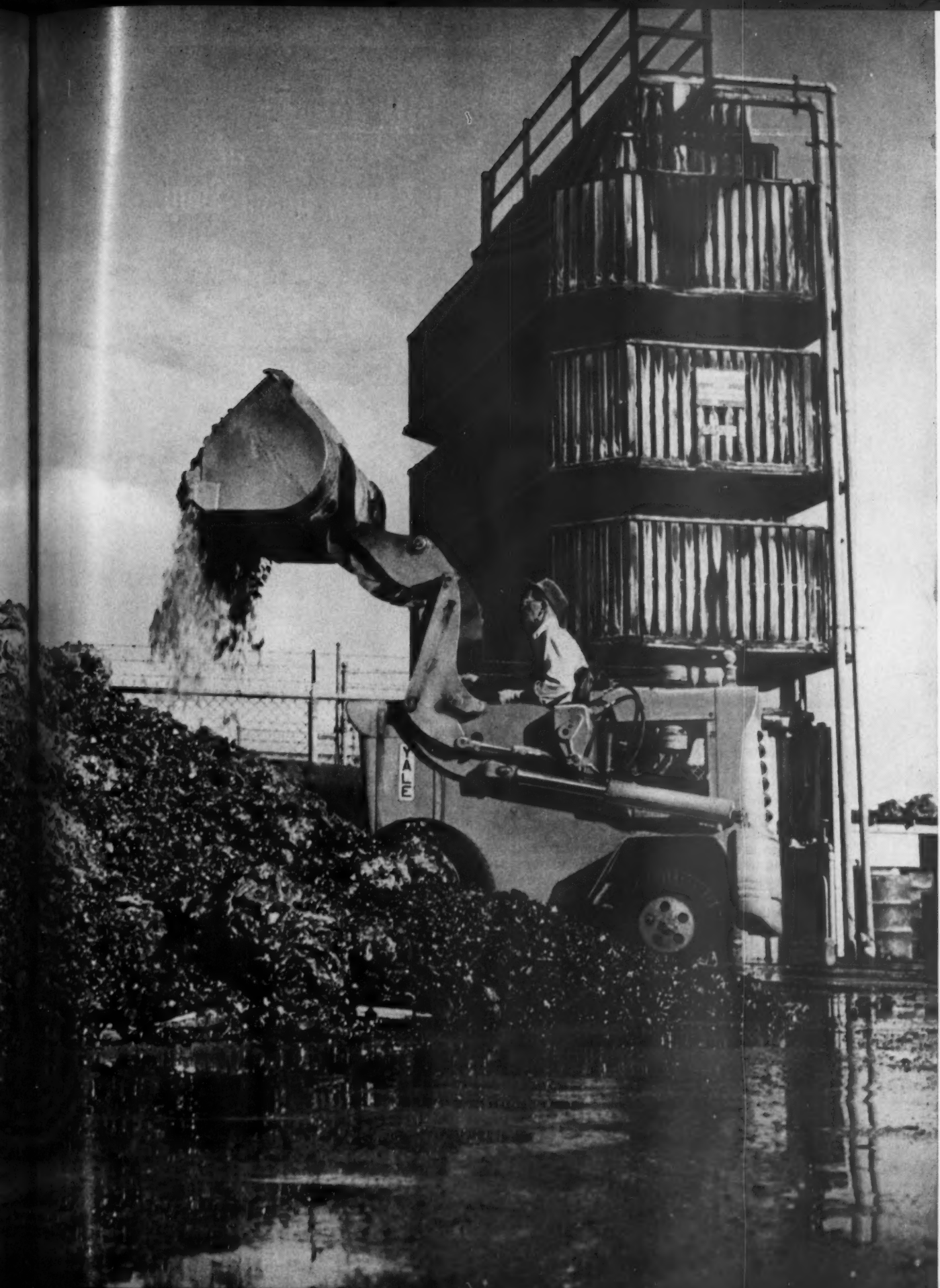
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INDUSTRIAL LIFT TRUCKS
TRACTOR SHOVELS • HOISTS

YALE & TOWNE

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Illustrated is one of the cranes lowering a dynamic brake grid hatch onto a locomotive. As a safety measure, Cleveland Tramrail SAF-POWR-BAR electrification is used throughout.

5 Ton Cranes Speed Handling at Southern Pacific Diesel Shop



Approximately 200 Diesel Freight Locomotive units are serviced at the large, modern shop of the Southern Pacific Railway, Roseville, California. Playing an important part in this operation is the Cleveland Tramrail overhead crane system which provides handling service for the entire plant.

There are two 5-ton 62'-10" long cranes operating in two bays, each of which has four crane runway tracks. The tracks are not spaced equally but are arranged to fit between air ducts and ventilating equipment in the ceiling to obtain maximum crane lift. The use of Tramrail multi-runway cranes made possible the construction

of a lower height building than would have been required with top-running type cranes.

The cranes are powered by tractor units attached to each crane truck. These powerful drives provide smooth acceleration and are easy to remove and maintain. The cranes are floor operated and push-button controlled. The ease with which parts are spotted into exact position makes the crane a tremendous asset when overhauling locomotives.

This shop is the service center for an area extending from Portland, Oregon, to Fresno, California, and from the Pacific to Sparks, Nevada. It is in operation 24 hours a day, 7 days a week.



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... goes on faster, stops rust, lasts longer over rust!

ONE MAN often does the work of two!

Easier to use—because Rust-Oleum 769 Damp-Proof Red Primer goes directly over sound rusted metal after scraping and wirebrushing to remove rust scale and loose rust—usually eliminating costly surface preparations. **Stops Rust**—because the *specially-processed* fish oil vehicle in the 769 Primer penetrates rust to bare metal—helping to drive out air and moisture that cause rust. And it's easily applied by brush, spray, or roller.

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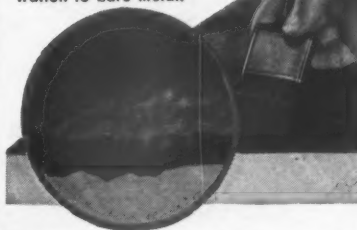
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Over seventy colors are included in this unique new system that combines four important points: (1) The ability to Stop Rust, (2) smart, modern color harmony, (3) the durability to last and last, (4) ease of application that saves time, money and metal.

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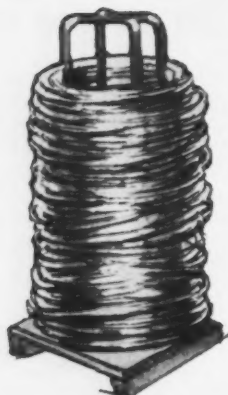
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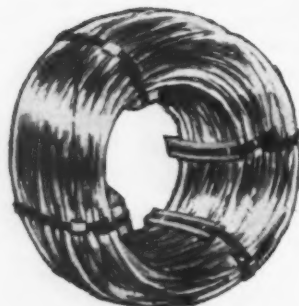
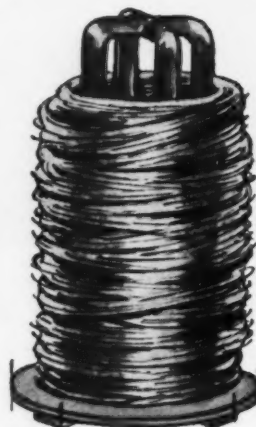


Returnable Spider — a sturdy wire carrier that holds 2000 to 3000 lbs. of wire in one continuous length. It consists of a center core made of 2" steel pipes welded to a heavy base plate. Spiders are easy to handle, simplify storage and inventory control problems.

Now you can save time, space and money by using the CF&I wire package best suited for your wire-forming operation. Such modern packaging methods are typical of the many procedures that the Image of CF&I employs to serve his customers. Furthermore, CF&I Wire is top quality, and can be furnished with carbon steel properties custom-made to your needs.

Choose the Package That Offers You the Most Value

Disposable Stem-Pak® — a "throw away" pallet which holds 500 to 1000 lbs. of wire. It holds as much wire in one continuous length as seven standard mill coils. The Stem-Pak has a center core fabricated from wire or rods attached to a wooden base mounted on 4" runners.



Shaped Coil — contains 1500 to 2500 lbs. of wire in one continuous length. These coils are bound with four steel straps. When the wire diameter or weight of the coil require it, the steel straps are fixed to wooden supports inside the coil to insure that the coil is not distorted in transit or in-plant handling.

The extra-long lengths of wire on each of these packages will increase your production, reduce machine downtime and help cut scrap loss. When you order wire, contact a CF&I sales representative. He'll be glad to discuss your wire requirements with you and recommend the CF&I wire package that's best for your operation.

CF&I WIRE

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LEASE...RENT...or BUY

Your Material Handling Equipment

Towmotor Corporation and its subsidiary Gerlinger Carrier Company offer you three simple ways to improve your material handling operations . . . realize immediate savings . . . and accomplish this with little cash outlay.

1. You can put Towmotor-Gerlinger material handling equipment—fork lift trucks and material carriers—to work on a continuous round-the-clock basis through the Lease-A-Truck Plan. No down payment—no working capital tied up—just a small monthly charge.
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Complete factory supervised maintenance can be included in any of the above plans.

You'll find Towmotor-Gerlinger handling economies consistently pay the small monthly cost many times over. For complete information on any of these profitable, money saving plans, write or contact Towmotor-Gerlinger Rental Division, Towmotor Corporation, Cleveland, Ohio.



FORK LIFT TRUCKS, CARRIERS AND TRACTORS SINCE 1919
Gerlinger Carrier Co. is a subsidiary of Towmotor Corporation

See the Towmotor display in Booth 508 at the 3rd Western Material Handling Show, May 11, 12, 13, Great Western Exhibit Center, Los Angeles

water

*comes in oceans, rivers, lakes, wells,
drops, buckets, pitchers and glasses.
it quenches thirsts, cooks food, puts
out fires, makes coffee and
brushes teeth. it spins mills,
runs electro-plants, cools motors
and power factories.
it spawns fish, sprinkles lawns,
floats boats, washes children
and grows flowers.*

*it sustains and nurtures.
it bends if you give it purpose.
it reshapes itself if you give it reason.
it is needed, wanted, feared,
praised and prayed for.*

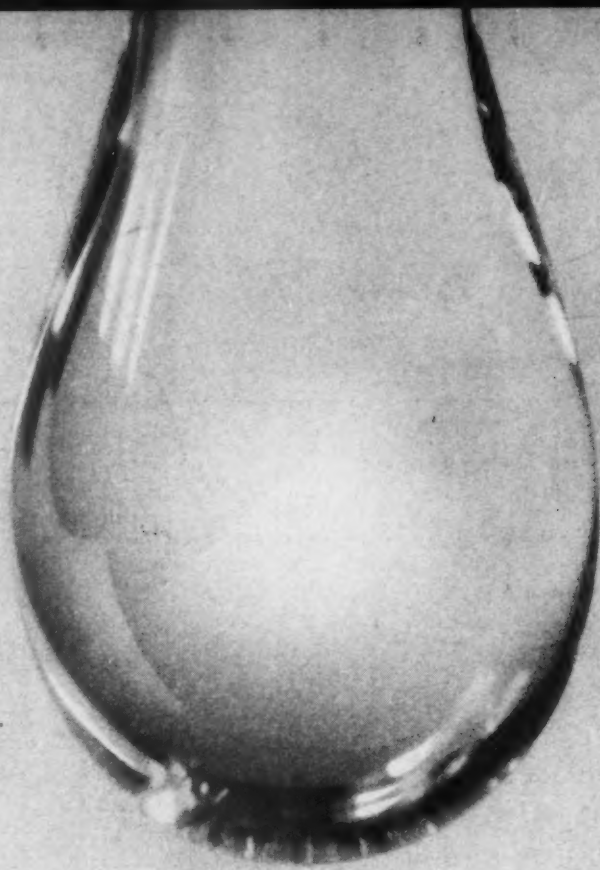
*it is at the heart of all life.
it is in the arteries of all industry.
it is as close to us as skin
but as taken for granted as sky.*

*the end of water seems unbelievable.
if it is not on the horizon, it is just over it.
if it is not within sight,
it is just 'round the bend.
if it is not in the glass,
it is just in the spigot.*

*... this is the grand mirage ...
the self-delusion that prevails
though the wells run low
and the streams go dry
and the water slips away.*

*we know water.
we know its ways.
we've learned its habits.
we've pulled it out of swamplands,
pushed it over mountains,
pumped it into deserts,
tunneled it through granite,
and rescued it from pollution.*

*above all else,
we know the need for it.
that is why,
for 130 years,
we've developed new uses for,
powered new factories with,
diverted the courses of
and jealously stood guard over
water.*



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A MAJOR INDUSTRIAL COMPONENT OF FAIRBANKS WHITNEY CORPORATION, NEW YORK

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The alternate to this is . . . DOWNTIME!

An ounce of prevention . . . can eliminate downtime in your plant. With today's highly mechanized manufacturing and distribution methods . . . downtime of materials handling equipment can mean the difference between a profit or a loss.

A Clark Dealer Continuous Maintenance Program, available from 113 Clark dealers across the continent, offers you the most effective, and economical method of reducing costly *downtime*. Here's why!

In brief, a Clark Dealer Continuous Maintenance Program offers you:

1) . . . regular maintenance on your industrial trucks on a *programmed* basis. Scheduling is conveniently set up for your particular operation. If you like, service to your equipment can be done at night or at any other time when your equipment is not in use. The additional cost for this off-shift service is a small percentage of the cost of *downtime*.

2) Clark dealers, with the aid of a national service personnel training program, assure you that the best trained mechanics in the industry will service your equipment. These highly trained specialists perform a minimum of 22 separate in-

spections on every truck serviced. They not only perform the normal jobs of greasing and oil changes, but also make all necessary adjustments to your equipment. Most important, they report the condition of your machines, anticipating failure before it happens. As a result . . . *downtime* is drastically reduced.

3) A Clark Dealer Continuous Maintenance Program gets you out of the repair and maintenance business. It eliminates the need for special tools, parts stock and use of valuable plant space for servicing facilities.

4) A Clark Dealer Continuous Maintenance Program is economical. It actually costs less than similar service on your own automobile. This is an inadequate comparison, however, when you consider the small cost of preventive type maintenance to the cost of *downtime*.

For detailed information on a Clark C.M. program call your local Clark dealer (he's listed in the Yellow pages) or write: C.M. Service, Clark Equipment Company, Battle Creek, Michigan. No obligation, of course.

CLARK[®]
EQUIPMENT

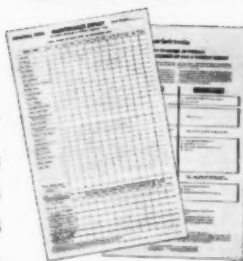
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**...easier to maneuver...
no gear shifts...quiet...clean
...vibrationless...last longer...
cost less to run, maintain.**



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by keeping simple maintenance records. Handy record forms can be obtained by writing us in San Francisco (Room 410). Forms provide a convenient way to record your labor, parts and fuel costs. Compare your



costs with any published reports on electric fork truck operating costs. You'll find the electric truck has proved much more efficient and economical.

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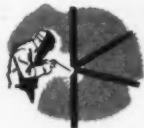
WHATEVER YOU MAKE...

whether you...

Form it



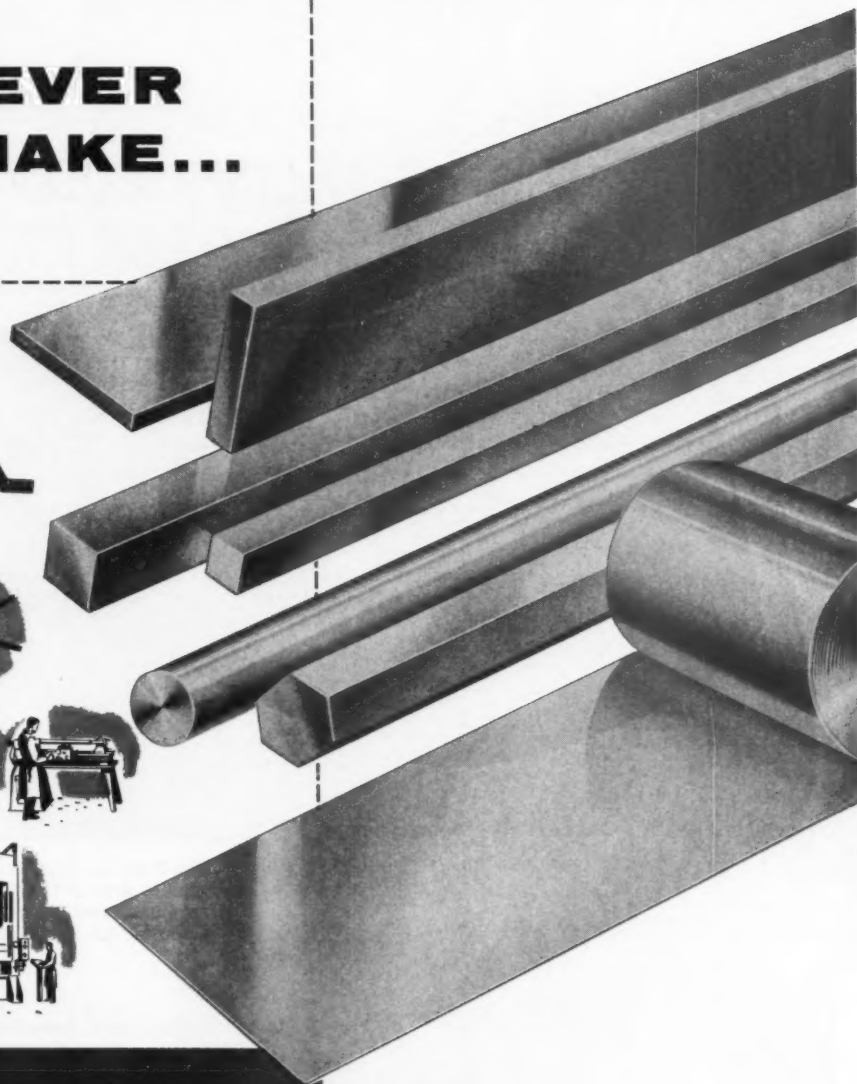
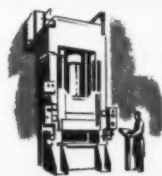
Weld it



Machine it



Stamp it



get your **METALS**
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STEEL:

Cold Finished Bars • Alloy Bars
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Bars, Sheets, and Plates

Excellent Inventories
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*An independently owned and operated company serving Western industry
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Industrial Efficiency Report

...now...at lower cost per ton-mile,
SOULÉ STEEL speeds customer deliveries
with the WHITE 2000!!!



Jack Dressen, Soulé Steel's Los Angeles plant manager, watches one of the firms 18 Whites being loaded with structural steel. (lower left) Hauling aluminum windows is another job for Soulé's White 2000s.



Versatility best describes Soulé Steels use of their White 2000s throughout Southern California. Yet, whether they haul steel forms, metal lath products, aluminum curtain and window wall, expanded metal or the 1001 other steel and aluminum products, one factor remains constant—Soulé's White 2000s operate with *lower cost per ton-mile* and hold down transportation costs.

White offers a complete line of custom-engineered trucks, built to exact specifications to serve every industrial requirement with maximum efficiency. Call your local White representative now for the facts on *your* particular need.

White Superservice is always available to keep your Whites in top earning conditions. Parts are readily available from the vast White dealer organization. And White service shops are the most completely equipped anywhere. Ask any White owner!

WORLD LEADER IN HEAVY DUTY TRUCKS

Branches, distributors, dealers in all principal cities.
THE WHITE MOTOR COMPANY, CLEVELAND 1, OHIO


WHITE

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WESTERN INDUSTRY/APRIL 1960

Wherever machines are in motion
or materials on the move . . .



Trukveyors



Chain conveyors

you'll find Link-Belt serving all industries

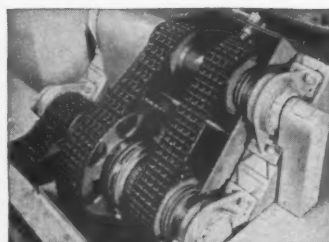
PRODUCTS of engineering . . . everything you need in materials handling, processing or power transmission, is available from Link-Belt. Best of all, it's *promptly* available . . . through extensive, conveniently located facilities.

West Coast industry is served by modern Link-Belt plants in San Francisco, Los Angeles and Seattle. Besides turning out a full line of products, these plants are prepared to handle complete installations . . . from planning through erection. Link-Belt also has six engineering sales offices strategically located along the Coast.

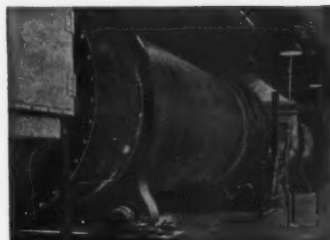
In addition, there are fifty authorized Link-Belt distributors (plus six warehouses) in the Northwest, Mountain States and northern and southern California. All are fully stocked to meet your normal and emergency needs.



Belt conveyors



Roller chain drives



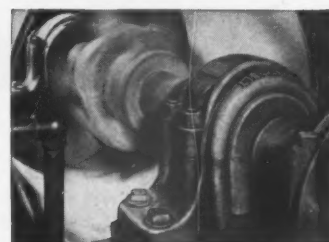
Dryers and coolers



Screw conveyors



Speed reducers



Ball and roller bearings



VALUABLE ENCYCLOPEDIA of materials handling, processing and power transmission equipment for engineers and executives. For your copies of 592-page Engineering Catalog 1000 and 640-page Products Catalog 1050, write General Manager, Pacific Divisions, LINK-BELT COMPANY, Dept. WI, 400 Paul Avenue, San Francisco 24, Calif.

LINK-BELT

LINK-BELT COMPANY: To Serve Industry There Are Link-Belt Plants, Warehouses and District Sales Offices at San Francisco 24, Los Angeles 22 (Montebello), Seattle 4. Warehouses and District Sales Offices at Portland 10, Spokane 10, Salt Lake City 1. Stock Carrying Distributors in Principal Areas.

15,380

**BASIC PRODUCTS
AND ENGINEERING
FOR INDUSTRY'S
BASIC WORK**

BEARINGS



**CHAINS AND
SPROCKETS**



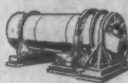
**CONVEYING
EQUIPMENT**



**POWER
TRANSMISSION
MACHINERY**



**ENGINEERED
(PROCESSING)
EQUIPMENT**



STANDARD ENGINEER'S FIELD REPORT

CHEVRON
PRODUCT ROOF COATINGS
FIRM MASONITE CORP.
Ukiah, California

Chevron roof coating resists acid vapor, 120° heat



Giant 242,000 sq. ft. roof of Masonite Corporation's Ukiah plant (above) is exposed to 120° summer temperatures and steam containing corrosive wood acid, yet Chevron Aluminum Asbestos Coating keeps it weatherproof and in good condition.

Plant Maintenance Superintendent Clyde Williams says, "We've found Chevron Aluminum Asbestos Coating to be a good, economical solution to our roofing problems. We've had far fewer leaks than with any other product we've used. It didn't take as much coating, yet it's done a better job of sealing the roof against steam and the wood particles that fall on it." Wood acid formed during manufacturing process is violently corrosive; in washer section of plant it has eaten a 4-inch hole through $\frac{1}{4}$ -inch steel plate.



For More Information about Chevron Roof Coatings call your Standard Representative, or write 225 Bush Street, San Francisco 20.

TRADEMARK "CHEVRON" AND CHEVRON DESIGN REG. U.S. PAT. OFF.

STANDARD OIL COMPANY OF CALIFORNIA



Inspecting roof, Yard Maintenance Foreman Otto Irmer checks present condition of Chevron Aluminum Asbestos Coating applied in November 1956. Coating is sound with cracks tightly sealed. Aluminum surface of coating reflects heat, protects underlying roof of prepared paper and tar on concrete blocks.

How Chevron Roof Coatings weatherproof prepared paper, metal, concrete, brick

- Coatings are easily applied, tightly seal cracks, seams, nail holes
- Wide expansion and contraction range of these coatings prevents cracking
- They adhere firmly, stay pliable
- Economical—cover well
- May be sprayed, brushed or applied with squeegee.

... for more details, circle No. 24 on Reader Service Postcard

WESTERN INDUSTRY/APRIL 1960



AUTOMATIC CONVEYOR

to any station, from any station

Flexible conveyor system operates overhead automatically stops and is dispatched from any of eight stations



IN COMPOSING ROOM of Times Mirror Press operator loads basket prior to sending it to another station.

A UNIQUE POWER and free overhead conveyor system designed to operate automatically under power from point to point or to provide automatic stops at any pre-determined point has been installed by Chainveyor Corp. at the Times Mirror Press, Los Angeles, Calif.

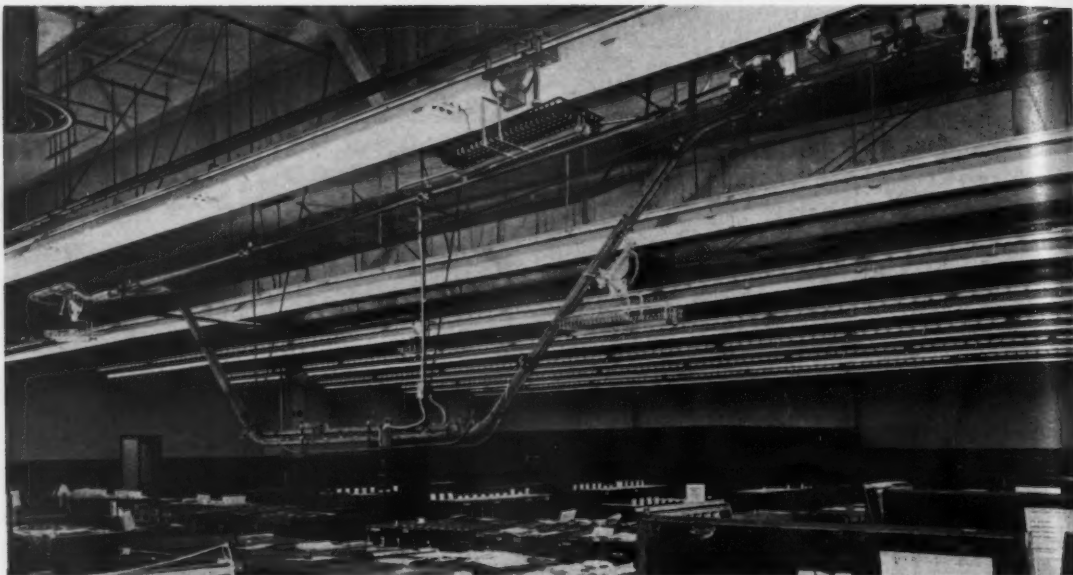
Times Mirror Press, the largest printing plant for telephone directories west of Chicago, needed a conveyor system with eight fully automatic receiving and dispatching stations to carry trays of type and printed matter. Copy, proofs, page corrections and type are dispatched in easily loaded metal baskets that ply between the linotype room, daily listings dept., advertising dept., classified, page correction, ad assembly, commercial and proof room at the Times South Boyle Ave. facility.

From any station a worker can send loaded baskets to any of the other stations. The 670-ft. system travels at 50 fpm throughout the entire 8 station complex. Seven stops are on the main floor with one in the proof room situated on the mezzanine.

Automatic setting for a pre-determined stop is accomplished by using a carrier having a slide index tab which is set by the operator for the station he wants. Carriers by-pass all other stations on the high level until the tab contacts limit switches at the station for which it was indexed.

The carrier automatically comes down and stops in the correct loading and unloading position. After loading and resetting the tab, the operator simply pushes the basket into position for the automatic pick up located by the drive dog on the power chain. This device engages the cross arm on the carrier and the shipment is on its way.

This unique feature is accomplished by use of free trolley assemblies running in standard Chainveyor track. The power part of the system is a standard Chainveyor chain drive and takeup that is installed in a second track that is mounted side by side with the free track.



CONVEYOR SYSTEM with view of one of unloading-loading stations. Basket is just entering line to station while a second one leaves station to enter system. In center is a free basket moving along the high line.

Trolley assemblies and carriers moving in the free track are propelled by the aforementioned drive dogs mounted in the power chain riding in the second track.

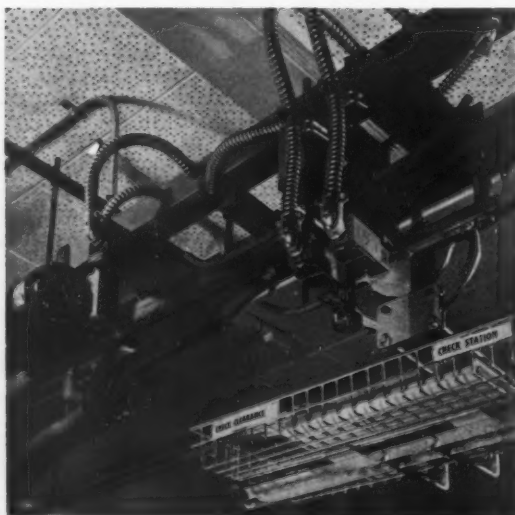
These dogs engage the cross arm on the carrier and bring it up to the same speed as the power chain, 50 fpm. With this arrangement, the load on the free track can be moved uphill, downhill, around curves and through switches where the carrier can be diverted to a free storage line.

In addition, an automatic index setting on the carrier

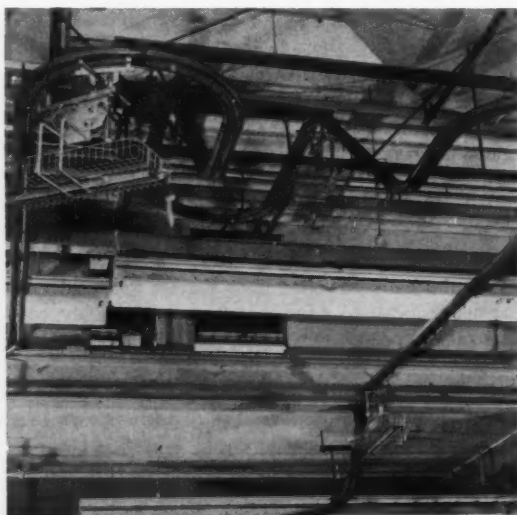
itself allows an inventory of empty baskets to be continually circulating through the system at all times and any operator can bring down an empty basket on command.

A U.S. Varidyne synchronous control unit is linked to the dual drives on the power system. The carrier is designed to eliminate swinging action of the basket as it traverses the conveyor system. This eliminates any shock to galley trays full of type. The basket is suspended so it remains horizontal while ascending and descending on the conveyor.

CLOSE UP of basket unit, limit switches and motor, as basket slide index tab contacts limit switches. Note BX-type electrical cabling.



EMPTY BASKET, left, headed up into mezzanine proof room. Note contours of system and fact basket stays horizontal while climbing.





TELESCOPING HOOD attached to the Ajax furnace folds down over the pot as a heat and fume control measure as the crucible is tapped.

AIR POLLUTION REQUIREMENTS met at reduced cost

Induction furnace used in sand foundry. Installation complies with regulations, yet requires less costly, smaller and simpler pollution control equipment.

MEETING STRINGENT air pollution requirements is an exacting job for the foundry, especially, when dealing with emission of super-heated fumes, particulate matter and zinc oxides during brass melting and pouring operations.

Western Brass Works, Los Angeles, Calif., has managed to comply with local Air Pollution Control District requirements, has cut down on emission of zinc oxides and at the same time has reduced the cost, size, and complexity of fume control equipment and bag house installations.

Key to the solution was installation of a 275 kva. Ajax induction furnace used in melting red brass having a relatively low zinc content. This is cast into an

extensive line of items including bearing bronze, irrigation sprinklers, valves, water pump replacement parts in a combination proprietary and job foundry operation.

The Ajax installation was made to supplement a fuel-fired furnace. Both the furnaces are rated at about 2000 lbs. per hour capacity. An Ajax induction furnace, according to Willard H. Brink, general manager, is not often found in a sand foundry operation, but is readily adaptable and has lowered maintenance costs.

The 275 kva. furnace, in operation since April 1959, has not been relined after 2 million lbs. of operation and Brink looks forward to an equal melt before new

lining is needed.

As an initial fume control measure, the furnace is equipped with a Western Brass-built telescoping hood that envelopes the pouring operation when the crucible is tapped.

But most important, air-pollution wise, is the fact that the induction furnace produces less zinc oxide, an item that makes up the major part of the fine particulate matter that finds its way to the bag house. In an 8-hour operation, less than 1½% of the melt is oxidized in the Ajax and this figure would drop if foundry operations were maintained for longer daily periods.

This contrasts with an 8% volume of zinc oxides that go up the flue from the fuel-fired furnace. Zinc oxides are not all waste, have a reclamation potential and are collected from the bag house by-product for sale to a refiner. But it is not a profitable by-product as the bag house is too costly to service.

Another contrast is in the air control equipment. Allied Industrial Engineering Co., Los Angeles, installed the equipment to service the fuel fired furnace.

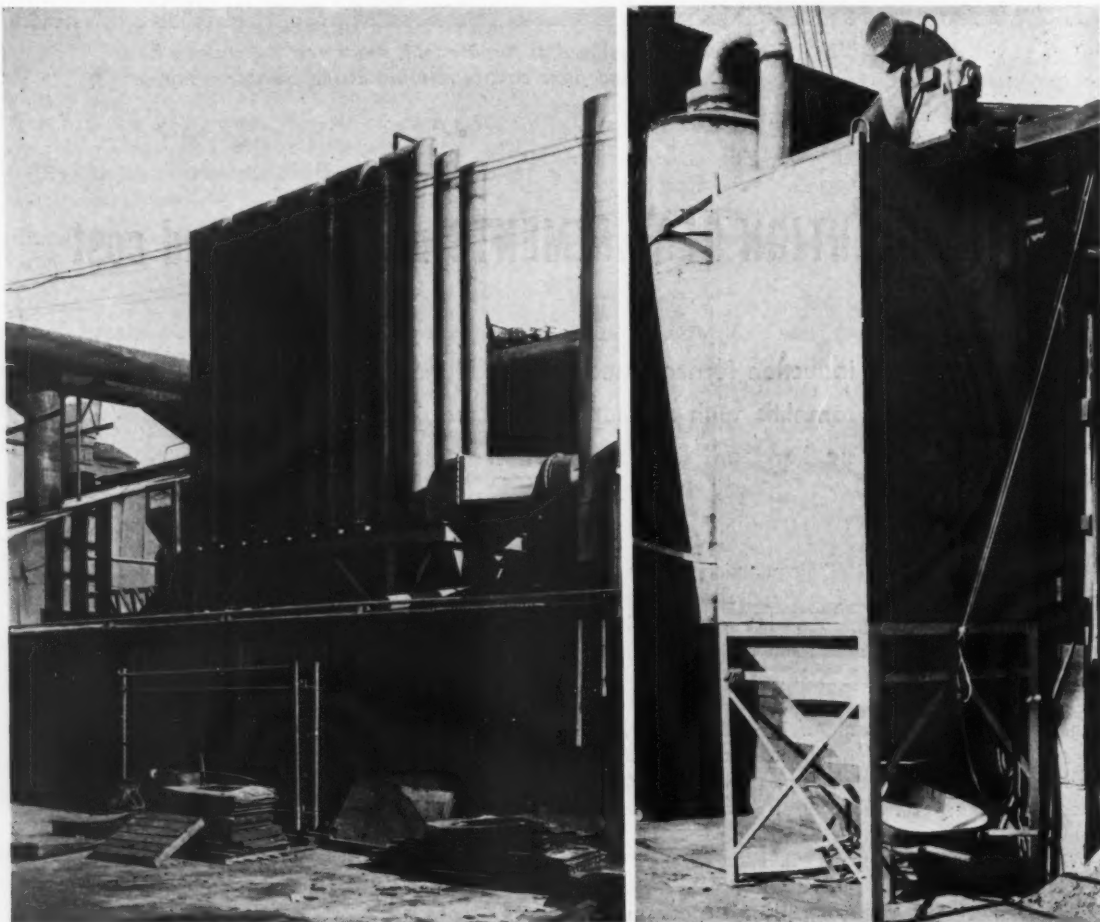
For proper control of fumes, considerable rooftop ducting was needed along with a large capacity bag house and a cooling system to reduce temperature of emissions from almost 2700 degrees F. to about 160 degrees F. prior to release into the bag house.

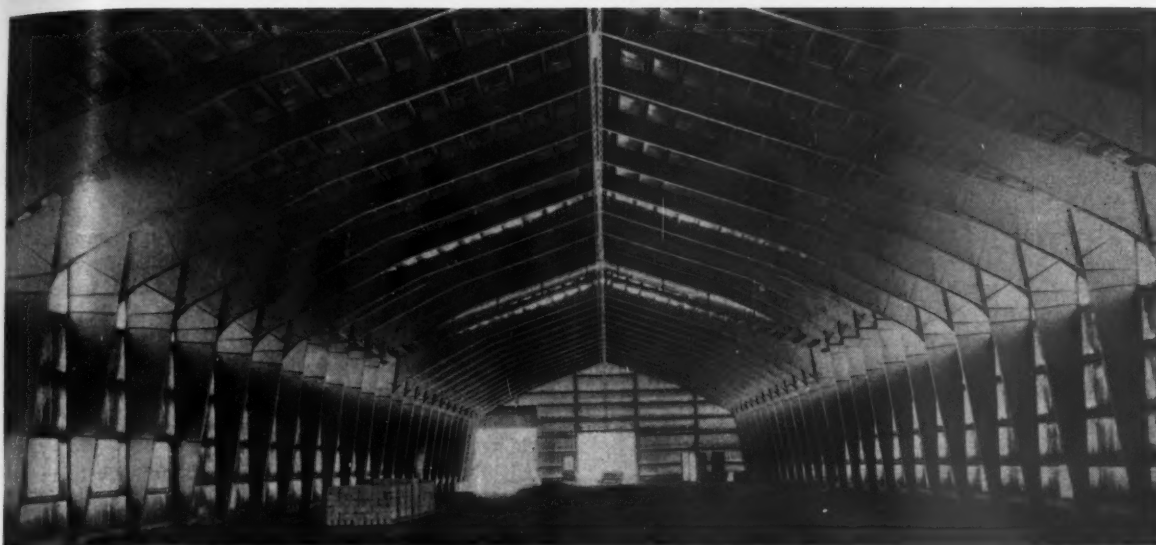
When it came to control of the Ajax system, Kelco Co. Norwalk, Calif., was able to take advantage of the lower zinc oxide emission factor to install control equipment at a 75% saving over the initial installation. Extensive overhead ducting could be avoided along with a complex cooling system. Minimum collection of particulate matter made a single hopper dust collector possible.

The entire foundry, which has another 110 kva. furnace, and an electronic hi-frequency core baker, is served by the Los Angeles Dept. of Water and Power with three 250 kva. transformers.

From the department's standpoint, the induction furnaces offer good load factors with off-peak consumption. Electrical rates enable the foundry to make quality castings with reasonable melting costs.

AIR POLLUTION CONTROL EQUIPMENT at Western Brass Works. At left is installation needed to service fuel-fired furnace; at right is installation needed to service induction furnace. Both furnaces are rated at about 2000 pounds per hour capacity.





INTERIOR OF PLANT located in Chester, Calif., on slopes of Mt. Lassen. Recently built by Soule Steel, plant roof must carry five times load because of heavy snow. Each plant and plant site project is unique and has own peculiar requirements.

TYPE OF STRUCTURE affects plant site selection

One aspect of plant site selection often neglected is a determination of the type of structure to occupy the site. Here is what one Western firm has discovered

A VITAL FACTOR in plant site selection, and one that's neglected, is a determination of the type of structure which is to occupy the site. While some might regard this as secondary, in the overall picture, it is as important as the more obvious considerations of tax planning, availability of materials and labor, transportation and proximity to key markets.

The company which chooses a site with only a vague idea of the size and type of facility which will occupy the site is borrowing trouble. It's likely to find itself in the same uncomfortable spot as the potential home owner who hastily purchases a lot and then discovers that it's too small, too steep or too something-else for his dream house. Result: an unhappy compromise.

What is needed, obviously, is a complete and detailed coordination of site and structure.

Fortunately for the Western site shopper, he doesn't have to go it alone in achieving this coordination. There are individuals and firms to whom he may turn for sound advice and guidance in selecting a suitable site for his proposed plant. If he's alert, he'll take advantage of this counsel, and early in the game.

Among the Western companies which are considered specialists in site and structure planning is the Soule Steel Company. Soule, headquartered in San Fran-

cisco, has been manufacturing various types of metal building products since 1911. It has only been in the past few years, however, that the company has found itself in a unique position to counsel potential plant owners. The reason lies in Soule's entry into the business of manufacturing metal buildings — structures engineered to a customer's exact needs.

So rapid has been the growth of this particular segment of its business that Soule now maintains a separate division for the planning and erection of various types of industrial and commercial buildings. Heading this group, which is under the overall supervision of Marketing Vice-President Stanley Soule, Jr., is Stanley Nightingale. His staff provides preliminary layouts and is in a position to work closely with architects and engineers in tailoring buildings to customer requirements.

What are some of the factors determining the type of structure to be built? Equally important, how do these factors affect the selection of a site?

Nightingale lists several considerations which should be carefully studied and analyzed prior to the final choice of a site. These will vary in importance according to the individual needs of the manufacturer. It's assumed, of course, that all primary considerations (tax structures, transportation, etc.) are favorable, and at

this point the manufacturer wishes to narrow his selection to a specific plot of land. Here are some of the things he should consider:

1. *Type of manufacturing operation.* Is it the type of operation requiring long production lines? A steady flow of materials? Lots of warehouse space? Buildings with long, clear spans?

2. *Size of operation.* What will be the capacity of the plant—now and at periodic intervals in the future? To meet that capacity, how much equipment will be needed? How many employees?

3. *Building codes and regulations.* What about fire zoning laws? How do these affect the amount of clear area around the plant, as well as construction materials? What about the requirements regarding setback from property lines? Minimum parking facilities?

4. *Plans for future expansion.* When and if the plant is expanded, should the expansion be linear, i.e. extra space added on to the end of the plant? Should it be alongside the existing plant? Or should it be isolated in separate buildings?

5. *Plant layout.* What is the most efficient layout of production and other work areas? How will this layout affect the size and shape of the buildings? How can an ideal layout be reconciled with the amount and cost of available land? Can reasonable compromises be made?

6. *Soil conditions.* What is the condition of the soil? Will it support the dead load of a building without excessive settlement? Heavy clay type soils can also present problems. Adobe, for example, will buckle and heave.

7. *Type of transportation.* Will the plant utilize truck or rail transportation, or both? Can suitable facilities be installed easily and economically?

8. *Type of manufacturing equipment.* What type of equipment is required, both now and eventually? Does this equipment pose any unusual structural problems? Should the plant, for example, be built to support

overhead cranes? If complex hydraulic systems are required deep underground, has the soil been analyzed with this in mind?

9. *Plant aesthetics.* Is the environment of the proposed site conducive to an attractive plant appearance? Will the completed plant be one of which the owner and the community can be proud?

These are only a few of the broad and basic questions which should be carefully analyzed in attempting to coordinate site and structure. Every building project is unique and has its own peculiar requirements. Soule, for example, is just completing a plant in Chester, California, which is on the slopes of Mt. Lassen. Because of the area's heavy snowfall, the roof of the plant is designed to carry an unusually high load of 65 lbs./sq. ft. The comparable load for standard buildings is approximately 12 lbs.

Nightingale emphasizes that there is no such thing as an "ideal" plant site.

"When all factors are carefully weighed, there are bound to be some inherent shortcomings in any proposed site. The thing to do is to analyze the shortcomings. Just how important are they? Can they be at least partially overcome through intelligent planning? Or are they sufficiently formidable to rule out the site?"

"This is a business of compromises," he observes. "If a proposed site is a trifle small, perhaps something can be done in the design of the building to make up for it. If the land is expensive, perhaps some balancing economies can be incorporated into plant construction."

"The important thing, of course, is that all factors be considered. Furthermore, that enough sound opinions and ideas be obtained to enable the potential plant owner to make wise decisions."

"There's no question that good plant sites are becoming scarcer," he says, "particularly in the more densely populated areas. This places a greater responsibility on industrial planners to make maximum use of available land."



OVERALL VIEW of Chester, California plant in process of construction. Roofs of all buildings are designed to carry 65 lbs. per sq. in. Comparable structures not in snow belt are designed for loads of only 12 lbs. per sq. in.

FLEXIBLE SYSTEM for processing and packaging

Items requiring stringent quality control and having limited shelf life are processed and packaged. Extreme flexibility is needed because of many variables.

LOCATED IN A compact industrial park hidden in the heart of swank Beverly Hills, Calif., is a unique facility operated by Airsupply-Aero Engineering Co., Div. of Garrett Corp., where precision O-rings, electronic wire and cabling are warehoused, packaged and processed in operations faced with stringent quality control restrictions and limited shelf life.

Wire and O-rings, though poles apart in end use, are of prime importance to the missile and airframe industry, electronic manufacturers, makers of medical equipment, even scale model builders who use tiny O-rings to simulate tires.

Take O-rings for example. Primarily they are used as seals in airframe and missile hydraulic and fuel systems and are supplied to Airsupply by Precision Rubber Products Corp., Dayton, Ohio. The Airsupply stock ranges in size from a minute 3/32-in. OD to over 15-in. OD. Not only do these O-rings pose a packaging problem due to size, but limited shelf life, fixed at one year by Air Force and Defense Dept. specifications (AMA 438), requires careful inventory control.

In the field, overhaul and repair personnel must positively identify and install the correct size and type of O-ring for every application in order to insure the best possible service. The task of procuring and identifying the correct seal can be difficult since the part number cannot be put directly on the seal, usually because of size, and the possibility of error is increased by further confusion by introduction of new types of seals and obsolescence of others.

Compounds from which the O-rings are made have been formulated from different things to function under various operational environments and media that might range from fuming nitric acid to JP-4 jet fuel. An O-ring is useless if not resistant to the system



OPERATOR SWINGS INK POT open to reveal color disc that applies stripe. Note contrast between unprocessed wire right, and freshly striped wire in foreground.

fluids and operating temperatures. An O-ring designed for static seal use will not do the job when installed on a moving part such as a hydraulic piston.

Unfortunately most O-rings are similar in appearance and texture though their characteristics may differ widely. Here is where Airsupply comes to the rescue.

Depending on size and number of rings in the shipment, they are pulled from bulk stock and are packaged in hand-sealed polyethylene or polycraft bags. But before sealing a detailed information card is carefully inserted in the bag. It names the maker of the O-ring, its chemical makeup, part number, date of manufacture, and the number of items in the shipment.

Also carefully controlled inventory-wise is wire supplied by Suprenant Wire Co., Clinton, Mass. in a full range of 10 basic color-coded insulations. Wire comes in a myriad of dimensions and coatings including Teflon, Polyvinyl Chloride, nylon, lacquered Fiberglas and woven metal.

Sealed by the government at the factory to prevent tampering and pilferage, wire when removed at Airsupply for processing is carefully rechecked prior to customer receipt.

Basically wire is either striped with color to promote ease of identification, is cut to length, has a specific amount of insulation removed to make connections, or can be imprinted with number or letter coding. Any or all of these options can be ordered by the customer.

Following a shipment of wire through this process would find the customer first choosing striping from any of almost 700 color combinations. He is advised against unlikely combinations such as light yellow and orange stripes on red wire or other eye sores that



***BANK OF TWO SPARK TESTING MACHINES** are loaded for operation. Wire passes through chamber, top, fitted with electrically charged beads that are agitated by the rapidly moving wire. Any break in insulation causes machine to stop.*

would confuse the man confronted with a complex wire harness.

Most wire, except Teflon-coated types, will accept up to 3 stripes. These are applied automatically by a rapidly operating machine, 40 to 80 fpm, that takes wire from a shipping spool, cradled at floor level, threads it upward through an ink pot where color is applied, then through a heat curing cycle and onto a production spool.

Each ink pot contains a disc-like platen coated on its outside edge with color. The turns continually as the entire pot spins. The wire, threading rapidly through the mechanism, has a continuous diagonal of stripe applied in a style much akin to a barber pole.

The freshly striped wire then proceeds through a tubular heat cure device controlled by a Minneapolis

Honeywell unit. It then feeds through a series of pulleys and is returned to the production reel. The operator keeps tabs on ordered footage with a Productimeter measuring device.

Wire is removed and then checked for electrical qualities. This involves a spark testing machine fitted with a 10,000-volt electrical system linked to a series of electrically charged beads through which the wire passes. Any break in the insulation or other defect is instantly spotted and the machine stops dead.

Wire may then be cut or stripped with an Artos Engineering Co. machine capable of cutting to any desired length and stripping either or both ends of a wire to specification. A Kingsley Machine Co. stenciling unit can then be used to ink numerical or letter code on the wire at specific intervals.

***PACKAGING OF O-RINGS** is done by hand in a clean, grit-free atmosphere. Girl, rear, is inserting information card into package. Man is sealing larger O-ring into a polycraft bag.*



VISUALIZE your parts
made from **ALUMINUM**
Holobar...

per charl HSA-8 (December 1, 1989) and Kilsby Tubesupply AL-10

How many dollars go into your scrap pile when machining aluminum parts because stock didn't clean up completely or because an unnecessary stock surplus was wasted in chips?

Selecting the exact tubing O.D. and bore is easy now—without arithmetic, complicated formulae or chance for confusing slip-ups!

Just check your new Kilsby Tubesupply HOLOBAR Size Recovery Chart! It's *guaranteed* and takes out the guess-work...automatically compensates for out-of-roundness, concentricity deviations, etc.!

The Size Recovery Chart functions accurately every time because of special tolerances inherent in Kilsby Tubesupply HOLOBAR. It applies to both hard and soft HOLOBAR alloys—2024, 6061, 7075!

Ask For Your Free Copy—If you haven't already received a copy ask us for a HOLOBAR Size Recovery Chart. Tack it to your wall, use it in your workbook, or keep it in the handy file folder in your desk...you'll find the HOLOBAR Size Recovery Chart a *time-saver, work-saver, dollar saver!*

Don't Say We Didn't Warn You! Because Kilsby Tubesupply HOLOBAR tolerances are *different*, the Kilsby Tubesupply Size Recovery Chart is *guaranteed* to work with *this material only!* Test it and see for yourself.

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WESTERN INDUSTRY/APRIL 1960

NEW COMPANY NAME!
(formerly PERRY KILSBY, INC.)

So that new customers and old friends can quickly recognize our *function* in industry, we've selected a new company name that retains our identity yet is far more descriptive of our job... **KILSBY TUBESUPPLY**

**Same people, same products,
same locations!**



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Main 3-6000

Everything in Tubing... Nothing but Tubing
CARBON, ALLOY, STAINLESS, ALUMINUM, ALUMINUM HOLOBAR
... for more details, circle No. 25 on Reader Service Postcard

CURRENT STOCK LIST AVAILABLE—New tubing sizes, completely updated. Ask for your copy now.

AFTER LIFTING COVER of the Datatyper 410, S. A. Dashew, president, Dashew Business Machines, examines operation of unit, first completely automatic single character embossing machine producing plastic cards or metal plates from punched cards.



DATA PROCESSING from punched cards to plastic plates

Unusual machine transfers information from punched cards to embossed plastic or metal plates. Process has many uses.

A NEW ELECTRONIC DATA processing machine that transfers information from an IBM card and embosses it on a plastic or metal plate that can be read easily is being used by Western industrial firms for payroll operations, production and stock control systems and to keep track of people and things in general.

Called the electronic Datatyper 410, the embossing machine is made by Dashew Business Machines, Inc., a Culver City, Calif. firm that has pioneered in manufacture of rugged aluminum alloy plates, called Dashaplates, that are embossed with data and are used for routing of parts, scheduling, inventory control and employee ID cards since they can be wired, stuck, nailed, stapled or fastened to almost any surface.

The machine contains up to 60 characters, depending on needs of the application, and will emboss plates of varying types and hardness including stainless steel. Blank plastic or metal plates are fed into a hopper as the card or tape control is placed in the input portion. The machine is then activated and operates at an average speed of 14,000 characters per hour, four characters per second.

Numbers and characters are automatically sequenced on command from the card or tape. The 410 will emboss specially coded "machine language systems" or will place the alpha-numeric "man language" found on such cards as the ubiquitous plastic credit card carried in almost every wallet. Dashew last year manufactured more than 20 million plastic credit cards for clients including the Bank of America and Standard Oil of California.

The 410 will also emboss the Dashaplate, made in 9 basic colors and varying in size from 3/4-in. by 2-in.

to 3-in. by 5-in. and used on the Pacific Coast as a media of identification by the Air Force, North American Aviation, Inc., Curtiss Wright Corp., Lockheed Aircraft Corp., and General Dynamics.

For example, North American and Lockheed use Dashaplates in their manufacturing processes to quickly route parts that may possibly go through chemical baths, painting booths and heat treat cycles.

Because the identification plate may be exposed to many destructive elements it is made from specially alloyed aluminum that has been coated with an epoxy resin. This withstands such chemicals as hot orthodichlorobenzene, used to clean jet engine parts.

A further step is color coding of the plates. Curtiss-Wright Corp. is using colored Dashaplates to indicate completion dates of various work orders. Scheduling personnel can tell at a glance what jobs are on schedule and those that lag behind.

For material handling operations, the Navy is using green Dashaplates for stocklisting, red plates to mark materials unfit for issue, and white-colored plates for material ready to be released into service. Colored Photoplates, an embossed photographic identification badge, have proven to be a low cost ID system for large numbers of personnel. The plastic is forge, fire and weather proof.

For shipments that are exposed to a harsh chemical environment or to extremes of weather, Dashaplates have been used to supplant paper-tag identification. The Air Force, after trying plastic-coated, (shellacked) and varnished paper tags, turned to the Dashaplate that could be affixed to crates and drums by wire, adhesive, staples or nails.



LIFT TRUCKS GIVE YOU

Dollar-Saving Differences...



...in low maintenance

"Downtime: none—Repair costs: none"—that's the report of this brick plant on their Allis-Chalmers 4,000-lb lift truck after three years of operation.

Another user, a brewery, reports trucks in their Allis-Chalmers fleet going for five years — *over 20,000 hours* — without an engine overhaul. Maintenance time *saved* means production time *gained* — and users tell us no other lift truck saves maintenance time and expense like Allis-Chalmers trucks do.

Many
Models
to Choose
From

SEE US
at the
Western Materials
Handling Show
May 11-13
Los Angeles
Booth 311

ALLIS-CHALMERS FORK LIFT TRUCKS

CAP LB	LOAD CENTER INCHES	TIRES
2000	24	Cush.
2000	24	Pneu.
3000	15	Cush.
3000	24	Cush.
3000	24	Cush.
3000	24	Pneu.
4000	18	Cush.
4000	24	Cush.
4000	24	Pneu.
5000	24	Cush.
5000	24	Cush.
6000	24	Cush.
6000	24	Pneu.
6000*	24	Cush.
6000†	24	Cush.
7000	24	Cush.
8000	24	Cush.
10,000	24	Cush.

Choice of lifts and masts available. All models are available with either standard transmission or POWER SHIFT Torque Converter Drive. For safety in hazardous areas: Underwriters' laboratories-approved GS (gasoline-powered), DS (diesel-powered) and LS (LP gas-powered) models. Also DX Safety diesel models (accepted by Mill Mutual Fire Prevention Bureau) to provide exceptional protection. Attachments to fit the need.

*Stevedoring Model (available with either 3" or 6" clearance)
†Open Hearth Model



...in long service life

"They're brutes for punishment," comments the production manager of a metalworking plant. "They lift capacity loads 18 hours a day, yet stand the punishment very well. We used to replace an engine a year — haven't replaced any in Allis-Chalmers trucks." Their ruggedness is shown by the deep-section, automotive-type frame — strongest backbone ever used in a lift truck!

...in performance

"Operating costs much lower" — "Our fleet of 14 Allis-Chalmers lift trucks has made it possible for us to operate at costs much lower than we thought possible," says the superintendent of a warehousing and stevedoring company. This reflects the easier maneuvering, more responsive power and greater grade-climbing ability — the all-round better performance turned in by Allis-Chalmers trucks.



Let your dealer tell you more about the dollar-saving differences of Allis-Chalmers lift trucks. See the yellow pages of your phone book and call him for a demonstration. Allis-Chalmers, Milwaukee 1, Wisconsin.

BH-138



ALLIS-CHALMERS

POWER FOR A GROWING WORLD

THIN STRONG V-BELT solves power transmission problem

Strain is reduced by using more belts than formerly possible.

THE OPERATION OF a large rock crusher requires a tremendous amount of power and imposes a severe strain on the V-belts that transmit this power. Replacement of V-belts is frequent and results in loss of operating time. Carbon Brothers, Spokane, Washington, rock crushing plant has been able to reduce V-belt replacement materially through the use of new narrower, stronger V-belts capable of handling several times of power in a given space of standard belts. Because of the narrowness of these belts, more belts can be used than formerly.

A 30 x 42 in. Pioneer jaw crusher is the heart of Carbon Brothers' rock processing plant. Dumpsters deliver the rock to a feeder conveyor that feeds it into the crusher. As the rock comes out of the bottom of the crusher, it is taken away by another conveyor. Further reduction is accomplished in other machinery to produce rock $\frac{3}{4}$ inch or smaller.

The jaw crusher is driven by a 265 hp International UD24 diesel engine. Its jaws close at the rate of 250 times per minute on hard basalt rocks up to 25 in. thick, reducing them to a size of 3 in. or smaller. Power is transmitted through multiple V-beltting into a 50 in. diameter flywheel, having a face width of 14 in.

In the past D-section belts were used to drive the crusher. Due to their width, only nine could be squeezed into the 14 in. of available face width on the flywheel. The strain of the crushing job as well as that imposed by the motor impulse from the diesel engine was too much for just nine belts. Belts snapped much too frequently. This strain-drive problem is not unusual in rock crushing plants, and V-belts are commonly replaced on an average of every three months.

Now using Dodge's new Dyna-V drives, capable of



handling up to three times as much horsepower in a given space as standard V-belt drives, the 14 in. flywheel is fabricated with 14 V-grooves in a width of only 10 $\frac{3}{8}$ in. Thus, the breakdown problem was eliminated because the number of belts could be increased from 9 to 14 and each of the 14 belts were capable of withstanding a greater load than were the standard V-belts.

The circumference of each of the present belts is 280 in. The sheave mounted on the diesel engine shaft is an 11 in. unit. The compactness of this new drive lies in the use of full performance possibilities of modern synthetic fibers and rubbers as well as modern alloy metals. Combined in a V-belt shape, these materials have been put together with a crowned top surface and concave side wall surface.

PLATING RACKS made with special solder

Solder matches job temperature requirements

NORTH WEST PLATING Company, Seattle, Washington, makes its own racks for job plating. Formerly the racks were soon weakened by electrolysis as acid found crevasses in the plastic coating at points where contact tips were bolted to the frame.

To correct this the plating concern decided to braze the contact tips to the spline. However, this created another problem—the heat of brazing annealed the copper contacts with the result that they bent under load.

Soldering was then tried, using a conventional hard solder with minimum temperature requirement for application of 1130 deg. F. This heat also had an annealing effect on the copper, causing the contact tips to

bend when loaded.

The answer was found in high-strength, silver-bearing stainless solder, manufactured by All-State Welding Alloys Company of White Plains, New York. Working temperature of All-State's 430 solder and non-acid flux is 430 deg. F.—high enough to withstand baking, low enough to avoid annealing action.

North West Plating Company figures it saved \$300 in making a dozen plating racks of the type illustrated. Soldering eliminates drilling holes in the frame and the use of bolts, washers and nuts. More important, it cuts fabrication time by 80%, reduces weight of the finished product, and produces a longer lasting plating rack.

READY NOW!
...and BIGGER
than THREE
football fields!





Every Modern Facility

plus

**Unlimited
Storage...**

*for immediate
delivery of*

**STEEL • ALUMINUM
STAINLESS STEEL
MAGNESIUM**



Efficiently organized cutting department in new Reliance metals service center means no order pileup when customers want bar stock and structurals cut to order in a hurry! Shown are two Peerless Mechanicut saws capable of cutting up to 14" x 14" stock while the DoAll hydraulically-operated saw at right handles up to 12" x 16" material. Background shows part of ample stock always on hand for immediate customer service.



Acres of warehouse area assure ample stocks for all requirements! Plenty of room for fast order filling, better customer service! Photo above shows efficient layout as a result of careful planning which provides Reliance customers with "same day delivery" for any order from complete inventories on hand, whether for a single bar or several tons of plate. Pneumatic tube system connects dispatch stations throughout warehouse, helps keep paper work moving fast.

...to give you better service!

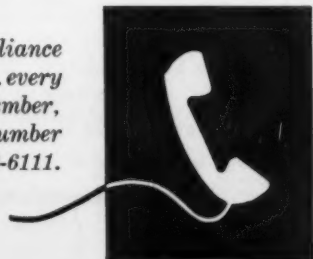
Now, more than ever, you can rely on Reliance for the fastest, most efficient metals service available on the West Coast!

Virtually unlimited storage area—bigger than three football fields—plus careful warehouse planning and up-to-date mechanical equipment, team up to provide 24-hour service that can't be topped for efficiency.

Complete inventories of all stock, permanent location, plus proper storage of all items enable us to give you prompt, accurate and exact service for all your metal requirements.

Now, rely on Reliance with more confidence than ever. Because Reliance can give you service unsurpassed anywhere in the West!

Call Reliance
any time...every
time. Remember,
our new number
is LUdlow 3-6111.



rely on

RELIANCE

RELIANCE STEEL & ALUMINUM CO.

2537 EAST 27th STREET, LOS ANGELES 58, CALIFORNIA

Come See Our New Warehouse!

See how Reliance can give you
faster, better service!



Photo shows unusually large steel plate inventory with A-7 plate ranging from 3/16" to 6" in thickness, widths 48" to 96", lengths to 40'. Double overhead crane makes for easy handling. Steel floor plate is stocked 14 ga. to 1/2" thickness, 36" to 72" widths and lengths to 20'.



Dahlstrom corrugating machine produces corrugated sheets from galvanized and aluminum coils to either 26" or 27 1/2" standard widths, to any designated length.



Unique Reliance storage rack system for 20' steel bars provides greater speed in making up orders. For large order quantities, bins are mechanically rolled out to unloading ramp for easy access to stocks with overhead cranes. Small item quantities are drawn from rack by hand.

Visit Reliance's new metals service center. See how streamlined warehouse operations, ample storage and complete inventories of fresh stocks result in faster, better customer service. Go through our new facilities and you'll be convinced that Reliance is the one to call for service. Remember our new phone number—LUDlow 3-6111.

rely on

RELIANCE

RELIANCE STEEL & ALUMINUM CO.

2537 EAST 27th ST., LOS ANGELES 58, CALIF.



PRODUCTION REPORTS

made automatically by computer

Preparation of manufacturing reports by automation has saved this Western firm over \$1,000,000 annually.

IN ORDER TO STREAMLINE the flow of paper-work vital to large scale fabrication, Northrup has developed an automated system of preparing manufacturing and allied reports using data transcribed by key punching and processed by computer to eliminate clerical functions of personnel engaged in fabrication, production planning, cost control, and inventory.

Spokesmen at the Hawthorne, Calif. Norair Div., indicated that the system, in operation there since last month, is overseeing 30,000 production orders daily and that annual cost savings will far exceed the hundred thousand dollar mark.

Prime mover of the system is the Friden Corp. Collectadata transmitter, a key punch device placed in 97 locations spotted throughout 27 manufacturing shops. Here fabrication, manufacturing and cost control, and inventory workers feed information into the transmitter by edge-punched coding on a standardized production order form.

Up to 15 variables can be indicated on the form. The machine automatically reports the location of the shop, and identification number of the employee responsible for the part. By using a dial system, need for tool and equipment replacement or repair can be indicated along with spoilage of work, down time, and production stoppage due to raw materials shortages.

This fund of information, collected during day-shift hours, proceeds through a network of telephone cables to receiver units for conversion to punched paper tape. This in turn is converted to magnetic tape in the Norair computer center. This is input for the IBM 704 computer that turns the data into IBM cards from midnight to the early morning hours. The IBM cards are then used by a high speed printer that turns out typewritten reports that await personnel at their work stations when the 7 a.m. shift opens.

According to R. R. Nolan, Norair vice president, the system will save 425 man-hours daily that were spent in preparing hand-written reports.

These were slow to prepare, costly, riddled with mistakes and sometimes illegible.

The basic production order cards eliminate a dozen types of handwritten reports. It was estimated that two railcar-loads of paper work would be avoided annually.

When the Collectadata unit is turned on an auto-



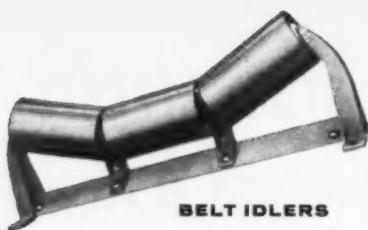
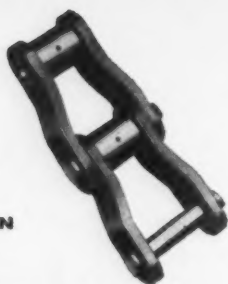
INFORMATION IS FED INTO COLLECTADATA unit by manufacturing control dispatcher Frank Eskrow. He is edge punching the production order while Carl Yates, right, assistant director of manufacturing control, and Richard Crews, supervisor of manufacturing control, check another production order that replaces a number of hand-written forms.

matic lockout system prevents jamming or interference from other units that might have begun operation simultaneously. Time of each transmission is automatically encoded.

The new system will allow the data processing center to operate for longer periods each day. During the day-shift it is processing intricate engineering and scientific data but had formerly operated at low levels of activity during the graveyard shift.



CHAIN



BELT IDLERS



Jeffrey equipment stocked for shipment



SPROCKETS



From factory or distributor stocks you can get fast service on a host of Jeffrey products...for elevating and conveying machinery and many industrial applications.

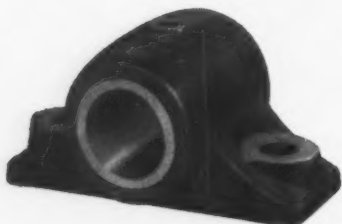
When replacing parts or modernizing machinery, it's wise to use genuine Jeffrey equipment. Highest manufacturing standards, based on years of experience, assure dependable performance. For service, call your Jeffrey distributor or write The Jeffrey Manufacturing Company, 920 North Fourth Street, Columbus 16, Ohio.



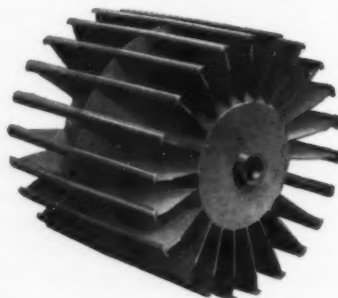
BUCKETS



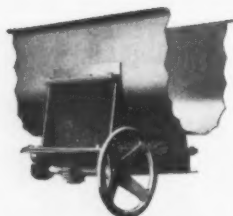
PULLEYS



PILLOW BLOCKS



SPIRAL CONVEYORS

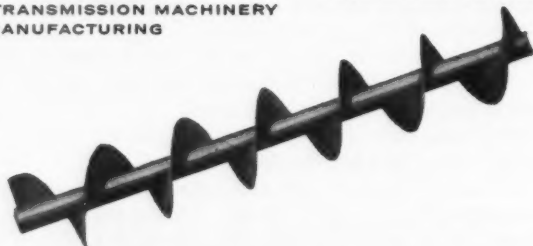


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WESTERN INDUSTRY/APRIL 1960

When there's a grinding production problem

A **Commercial Grinding Company** needed small internal grinding wheels for a production operation that was unexpected, unusual and highly important. The Norton Santa Clara plant came through with wheels in large quantities that enabled this customer to make deliveries of finished, internally ground parts on time.

Call your Norton Distributor Man

As a consulting specialist on the widest range of grinding jobs, your Norton Distributor Man is trained to give you expert advice. For unusual problems he can call in the local Norton abrasive engineer who has behind him 75 years of Norton experience in grinding wheel manufacture and application assuring you the lowest cost-per-piece ground.

Your Norton Distributor Man is your link with the complete line of Norton abrasive products and the entire Norton west coast organization — a strategically located group of highly trained abrasive engineers who have behind them the modern facilities of the Norton Santa Clara grinding wheel plant. It's an organization that's devoted to meeting the grinding requirements of western industry. When you have a production problem, call your Norton Distributor Man. He's as near as your phone. NORTON COMPANY, District Office, 5906 Pacific Blvd., Huntington Park (Los Angeles). General Offices, Worcester 6, Mass.



75 years of . . . Making better products . . . to make your products better

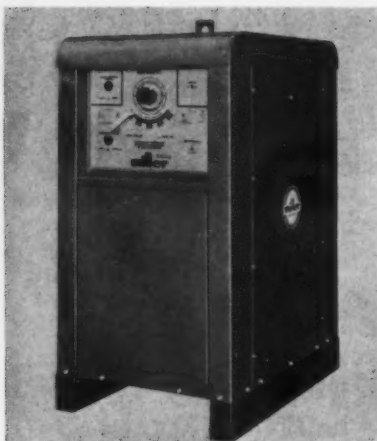
NORTON PRODUCTS: Abrasives • Grinding Wheels • Machine Tools • Refractories • Electro-Chemicals — DENN-MANNING DIVISION: Coated Abrasives • Sharpening Stones • Pressure-Sensitive Tapes

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EXCLUSIVE stacking feature on welders, A. O. Smith development.



ELECTRICALLY controlled balanced wave welder from Miller Electric.



TAPE programming welder made by Harnischfeger Corp.

WELDING SHOW, Los Angeles, April 26

The 41st Annual Convention and Welding Show of the American Welding Society will be the largest in AWS history.

THOUSANDS OF ENGINEERS from all over the world will converge on Los Angeles in April to visit the 41st Annual Convention and Welding Show of the American Welding Society. The technical sessions will be held at the Biltmore Hotel, and the Welding Show at the Great Western Exhibit Center, Los Angeles, California.

"It is very significant," stated Fred L. Plummer, National Secretary of the Society, "that our first Welding Show on the West Coast should also be the biggest in our history. Assembled in the Exhibit Center will be the largest and most valuable display of welding equipment ever to be on view at one time, and we urge engineers, technicians and skilled workers to take advantage of the opportunity to see the newest in welding."

The Welding Show opens at 10:00 A.M. Tuesday, April 26. The opening ceremony is traditionally performed by the cutting of a heavy metal chain stretched across the opening to the exhibits. The chain is severed by means of an oxy-acetylene cutting torch.

The hours are as follows:

Tuesday, April 26—10:00 A.M. to 10:00 P.M.;

Wednesday, April 27—10:00 A.M. to 10:00 P.M.;

Thursday, April 28—10:00 A.M. to 6:00 P.M.

On Wednesday, April 27, a panel discussion on maintenance welding will be held from 2:30 P.M. until 4:30 P.M.

The technical sessions are sponsored by the American Welding Society and the American Society of Mechanical Engineers. The Five-day program, April 25-29, is one of the most comprehensive ever attempted.

"The quality of the papers has never been higher," reports T. N. Armstrong, Chairman of the Paper Committee, "and almost the entire field is covered, from electron beam welding to nonmetallic structural materials."

HIGHLIGHTS

Highlights of the week at the headquarters hotel (Hotel Biltmore) include:

Monday, April 25

10:00 A.M.—Official Opening and Business Session addressed by Charles I. MacGuffie, President AWS.

National Awards

Adams Lecture: Higher Strength Steels in Welded Structures by Robert D. Stout, Lehigh University.

2:00 P.M.—Technical Sessions

4:30 P.M.—Educational Lecture Series (Part I)
New Welding Processes by H. Schwartzbart, Armour Research Foundation.

6:00 P.M.—President's Reception

9:00 P.M.—Annual Banquet

Tuesday, April 26

9:00 A.M.—A.W.S. Missiles & Rockets Welded Fabrication Committee Meeting.

9:30 A.M.—Technical Sessions

10:00 A.M.—Chain-Cutting Ceremony—Official Opening of Welding Show

4:30 P.M.—Educational Lecture Series (Part II)
New Welding Processes by H.

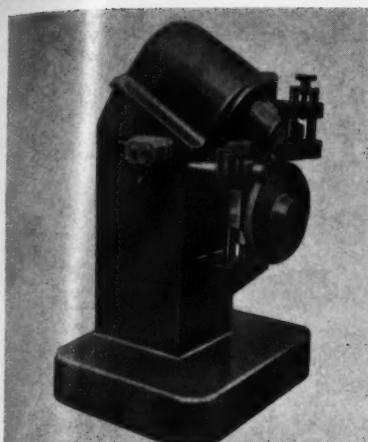
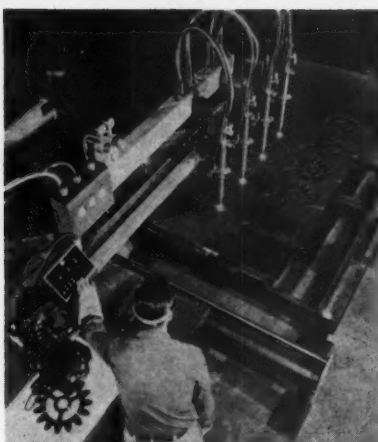


PLATE beveller prepares plate for arc welding by American Pullmax.



AIRCO 8-ft. shape cutting machine. Note centralized control station.



HARDHAT combination cap and helmet in Kedman Co. booth.

Schwartz, Armour Research Foundation

7:00 P. M.—Ohio State University Student Alumni Dinner

Wednesday, April 27

9:00 A. M.—Section Officers' Meeting

9:30 A. M.—Technical Sessions

1:30 P. M.—W.R.C. Aircraft Advisory Committee Meeting

2:00 P. M.—Open Meeting of National Nominating Committee

6:30 P. M.—W.R.C. Dinner

8:00 P. M.—W.R.C. Meeting

Thursday, April 28

9:30 A. M.—Technical Sessions

10:00 A. M.—Board of Directors' Meeting

Friday, April 29

10:00 A. M.—Exposition Committee Meeting

WHAT SOME OF THE EXHIBITORS ARE DOING

Air Reduction will have five live demonstrations. Shown will be the first public demonstration of their Electron Beam Welder, the new Linagraph flame cutting machine, automatic Heliwelding machine, torch brazing, Aircomatic welding. Also shown will be electrodes, torches, welders, gases and welding accessories.

At American Pullmax booth 805 visitors will view demonstrations of the new Model X-8 Beveller that cuts a ½ in. bevel on mild steel plate to prepare the seam for a perfect arc weld fillet.

A. O. Smith is showing three new welding developments and an exclusive welding machine design. AC welders are shorter in cabinet height and stackable. A new electrode cuts splatter loss up to 60%. Boost of 2000 watts makes their portable DC welders more versatile. Also see a demonstration of low cost button welding.

Fibre-Metal Products is showing their new line of No. 670 Series Welding Helmets with a style shell that is light and compact, and excellent for confined areas.

Harnischfeger Corporation's principal exhibit is a demonstration of their new tape programming equipment. Illuminated screen track simulates visually steps

and timing of heat stages in typical tape controlled welding. See also welders and two welding positioners.

Kedman Company will display fiberglass welding helmets, hardhat combinations and face shields. Main helmet features are plastic headgear and ball bearing locking device to hold window in line of vision.

Lincoln Electric's booth features new Squirtmobile, a small self-propelled tractor that produces submerged arc welds at up to 70 in. per minute, requires no guidance and simplifies fixturing.

Linde plans a number of live demonstrations at their booth 211. Visitors will see: the new dual carriage Oxweld CM-56 shape cutting machine with photocell tracer; Sigmatic line of "Mig" welding equipment; new Oxweld C-66 hand cutting torch that slices through 30 in. in one pass; new Oxweld regulators; Short-Arc welding, precision welding of thin gauge metals.

Metal & Thermit Corporation will feature an all new line of welding machines, DC rectifiers, AC transformers, AD-DC machines and inert-arc machines. Photos will show outstanding welding jobs done with their Murex electrodes.

Miller Electric Manufacturing Co. expects to introduce five new welders: electrically controlled balanced wave welder; diesel driven DC welder/AC power plant; gasoline driven AC-DC welder/power plant; constant potential DC welder; and a 1000 Amp., 100% duty cycle DC power source. Booth 311.

Pandjiris Weldment Co. in Booth 118 will show automatic production equipment including boom type and freestanding manipulators, precision and production positioners, and two turning rolls.

Standard Steel Corp., Booth 119, is displaying their new Transportable Recharger, a truck-mounted vacuum jacketed liquid oxygen tank to provide low, medium pressure liquid delivery or high pressure liquid or gas delivery. One man can operate.

Victor Equipment Co. will display a completely new line of automatic rebuilding machines, flame hardener, flux regrinder, pantograph. Also shown will be a semi-automatic hardfacing machine, welding and cutting equipment, gas regulators, hardfacing rods, blasting nozzles, cobalt and tungsten castings.

Administration and engineering offices of The R. C. Mahon Company's Western Operation at Torrance, Calif. The new facility, now in operation, includes a 200,000 sq. ft. manufacturing plant.

to better serve western industry ... **a significant announcement**



MAHON INDUSTRIAL EQUIPMENT

- Complete Finishing Systems
- Metal Cleaning Equipment
- Painting Facilities (Spray Booths, Flow Coaters and Dip Coaters)
- Filtered Air Supply Systems
- Drying and Processing Ovens
- Dust Collectors and Fog Filters
- Automatic Conveying Systems
- Welded-Steel Fabrication
- Special Plant and Production Equipment

CONSTRUCTION SERVICES

- Structural Steel-Fabrication and Erection
- Steel Fabrication-Weldments

MAHON . . . a famous name in finishing systems and other industrial equipment . . . announces its more-active role in Western Industry. A new manufacturing facility is now in operation at Torrance, Calif., to make available to you *Mahon industrial equipment and process-engineering services direct from a West Coast source.*

This Western Operation of the R. C. Mahon Company, has been formulated to take maximum advantage of the experience gained in the area—staffed by West Coast people and independently managed to West Coast design and manufacturing needs. It will be backed by the unmatched staff engineering specialists of Mahon on conveyorized finishing systems. Planning, fabricating and installing will be handled by the Western Industrial Division. This unique tie-in will mean cost savings, time savings and better service to the manufacturing industries of the Pacific area.

Mahon 'West' pledges itself to maintain the high standards of quality and performance of Mahon equipment. Further, we recognize and accept the Mahon responsibility for continued research and development of processing systems, application-engineered to Western manufacturing and production techniques.

To find out about Mahon Industrial Equipment . . . what it can do for you, your processing, your costs . . . see Sweet's Plant Engineering File, write the Western Operation for descriptive literature or contact local Mahon industrial representative.

THE R. C. MAHON COMPANY

DETROIT 34, MICHIGAN

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IN ALL
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Sales-Engineering offices at 2600 West Monterey St., Torrance, Calif. and 821 Market St., San Francisco.

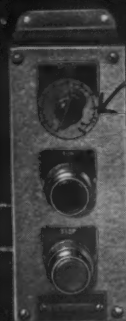
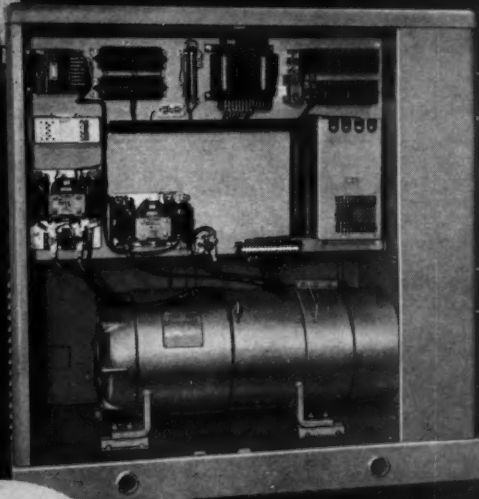
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WESTERN INDUSTRY/APRIL 1960

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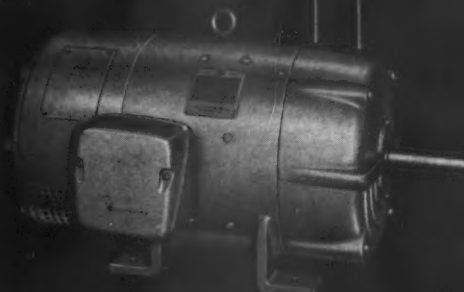
BUILDING-BLOCK FLEXIBILITY. 6"x6" transistor control panels permit adding and removing of circuits in your plant by your own electrician.



FINGERTIP OPERATOR CONTROL. Small potentiometers greatly reduce size of operator's control panels and are dust tight for maximum protection.

RUGGED FLEXITORQ MOTORS. Very high commutating ability; 400% short-time and 15% continuous overload capacities; fast acceleration and deceleration.

DEPENDABLE TRANSISTORS. Rated 35 volts, but stressed to only half their normal rating. Unusually high gain with twice the speed of response and only half the drift in gain of tubes. Transistors never fade — normally provide 15 or more years of service.



The New LOUIS ALLIS Select-A-Spede® Drive —First with field-proved All-Transistor Control

a high-gain, high performance d-c drive with unmatched flexibility and low upkeep

Here's a superior adjustable speed drive with simplified transistor-magnetic amplifier control. It's the easiest drive to set up and operate. A twist of the dial gives you stepless speed adjustment from zero to full speed in either direction. Each adjustment is independent, thus sparing you the need for compensating adjustments of inter-related settings. You get more consistent day to day operation because transistors — *unlike tubes* — are highly dependable.

The new Select-A-Spede defies obsolescence. To add functions you simply have your electrician install any of 13 "building-block" control circuits as your conditions require. These circuits come on inexpensive 6" x 6" panels ready for installation and are immediately available from Louis Allis stock. Thus a rebuilding or adaptation job that, on former equipment, cost thousands of dollars — excluding downtime — can now be done at

a fraction of the cost and time *right in your own plant!*

High quality transistors, field proven in missiles and other advanced electronic equipment, assure you of a high degree of dependability with a life expectancy of 15 or more years. Printed low-voltage transistor circuits are virtually trouble-free and can be quickly and easily replaced from low-cost stock.

Further savings are provided by the new Louis Allis Flexitorq® drive motors through vastly improved commutation, low brush wear, and their ability to safely withstand momentary overloads of 400% of normal horsepower rating.

Select-A-Spede sizes from 5 to 400 hp, speed ranges up to 20:1. Contact any one of the 60 Louis Allis District Offices for information and application assistance. Or write for bulletin 2001 to The Louis Allis Co., 438 E. Stewart Street, Milwaukee 1, Wisconsin.

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SPECIAL MANUALS

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TRUCKS, WHEELS, CASTERS

Narrow Aisle Stack Lift Truck

Colorful booklet about a new fork lift truck that reclaims lost warehouse space and expands warehouse capacity through better utilization of existing storage space. Describes features of the new truck which include extra-low profile, exceptional maneuverability and 180 degree pivoting action. *Towmotor Corp.*

... FOR YOUR COPY, CIRCLE NO. 250

Roller Bearing Stackracks

Catalog covers a line of stack bins for use in the stock room, in processing and in assembly. Also covers roller bearing stackracks, stockroom on wheels, and trucks built to accommodate sectional stack shelves, sectional stack bins, bin and rack combinations or individual stack bins. *Stackbin Corp.*

... FOR YOUR COPY, CIRCLE NO. 251

Industrial Electric Truck

Illustrated brochure describes 6,000 lb. capacity industrial electric truck with a new carbon-pile speed control. Discusses the speed control feature designed to give operators greater control by providing smoother, step-less acceleration. Includes photos, diagrams and full truck specifications. *Elwell-Parker Electric Co.*

... FOR YOUR COPY, CIRCLE NO. 252

Utility Tractors

Catalog covers a utility tractor line with matched equipment that enhances the versatility of the machines. Discusses advantages including low profile, high clearance, engine type, short turning, easy riding, convenience and economy of operation. Lists matched companion equipment, optional equipment and specifications. *Allis-Chalmers Mfg. Co.*

... FOR YOUR COPY, CIRCLE NO. 253

Two-Wheel Hand Trucks

Bulletin describes and illustrates a line of 30 two-wheel hand trucks that are guaranteed to last for five years. Among trucks pictured are: apple barrel, appliance, bag, Western type warehouse, cannery, cotton, delivery, express, drum, keg and case, railroad and stevedore. A specification table gives data on standard and alternate wheels, length of side including handles and approximate weight. *American Pulley Co.*

... FOR YOUR COPY, CIRCLE NO. 254

Power Lift Trucks

Illustrated in this folder are the basic types of line of lift trucks with dimensions of the more popular sizes and capacities. Describes types for various kinds of operations. Five sets of drawings show how to select the lift truck and skids or pallets to suit a particular type of loading. *Revolver Co.*

... FOR YOUR COPY, CIRCLE NO. 255

Latest Industrial Casters

Folder includes illustrations, descriptions and specifications of 24 different series of swivel-plate and rigid-plate truck casters ranging in applications from light duty to super-heavy duty. Floor truck locks are also shown and described. Pictures eight different types of wheels. *Faultless Caster Corp.*

... FOR YOUR COPY, CIRCLE NO. 256

Casters and Wheels

Forty page catalog of line of casters covers models, description, selection information, combinations, installation, material properties and characteristics. Discusses the gyro-action bearing, a new dimension in caster service and economy. Eight pages are devoted to line of wheels, covering features and specifications. *Rapids-Standards Co., Inc.*

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Loading and Storing Bulk Materials

Folder illustrates and describes three models of machines equipped with short, high-speed belt conveyors for hurling free-flowing bulk materials into areas inaccessible by other mechanical means. Describes and illustrates suspended, swiveling and wheel-mounted units which are used for hurling materials into storage in warehouses, boxcars, holds of ships, bins or upon the ground. Dimensional data is included. *Link-Belt Co.*

... FOR YOUR COPY, CIRCLE NO. 258

Walkie-Type Truck

Operation features of a walkie-type truck designed for work in highly congested area and for short hauls or intermittent operations are illustrated in this 16-page color booklet. Outlines facts to consider in analyzing your truck requirements; shows applications in receiving and shipping, in process, warehousing and order picking as well as special applications. Discusses proper selection of type truck for efficient and economical operation. Covers power features, attachments. *Automatic Transportation Co., Div. Yale & Towne Mfg. Co.*

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New steels are
born at
Armco

Armco SMOOTH-FLO sewer pipe

gives you all three advantages

1. Unsurpassed flow capacity

Because of the mirror-smooth interior lining of SMOOTH-FLO® Pipe, engineers have given it an "n" factor equal to or better than any other sewer pipe.

2. Flexible strength

With SMOOTH-FLO Pipe you get cor-

rugated metal strength that has the ability to flex under loads . . . positive joints that insure a continuing integral structure.

3. Proved durability

Armco Corrugated Metal Structures have been proved in service for more than 50 years. Improvements in protective linings and coatings indicate

even longer service life, particularly under severe erosive or corrosive conditions.

Write for your free copy of the four-page illustrated folder, "Armco SMOOTH-FLO Sewer Pipe." Armco Drainage & Metal Products, Inc., 2180 Milvia St., Berkeley 4, Calif. P. O. Box 751, Federal Station, Portland 7, Ore.

ARMCO DRAINAGE & METAL PRODUCTS



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Hand Operated Lift Trucks

Illustrated bulletin pictures single stroke hand lift trucks on the job. Lists models available and discusses application, operation and construction also covering custom designs to meet various handling problems. Outlines and illustrates features of the line that save man hours. *Barrett-Cravens Co.*

... FOR YOUR COPY, CIRCLE NO. 260

Drum Truck

Two-color literature describes a newly introduced drum truck incorporating important features and new ideas obtained from extensive research. Discusses features including new loading toe design, new cast-steel chime hook, new curved handle and deluxe wheels. For all standard 30 and 55 gal. metal drums, the bulletin also lists complete specifications. *Economy Engineering Co.*

... FOR YOUR COPY, CIRCLE NO. 261

Two and Four-Wheel Trucks

Catalog outlines line of two and four-wheel trucks emphasizing the spring bearing feature of the wheels as a unique contribution of the line. The booklet contains illustrations, and specifications of four wheel trailer trucks, package trucks, dollies and dump trucks, two-wheel spring bearing trucks, drum and barrel trucks and special trucks. *West Bend Equipment Corp.*

... FOR YOUR COPY, CIRCLE NO. 262

Lightweight Rolling Wheels

Data sheet describes new wheels for floor truck and caster application that feature lightweight and a new and high efficiency rubber. Discusses non-sparking feature and specifications including poundage capacity for two new types, one with lightweight cast aluminum centers, the other with cast semi-steel centers. *Nutting Truck & Caster Co.*

... FOR YOUR COPY, CIRCLE NO. 263

Hand Trucks and Wheels

A barrel handling device with wheels that automatically retract during the loading process to prevent creeping is featured in this catalog of hand trucks and wheels. Also pictures and describes a rock barrel stand for one man loading, a heavy duty drain stand, utility and general purpose trucks with up to 600 lb. capacity, all steel warehouse truck, bag and keg trucks, railroad freight trucks and a line of stock wheels. *Dico.*

... FOR YOUR COPY, CIRCLE NO. 264

Food Service Equipment on Wheels

A 64-page catalog of line of equipment on wheels that is manufactured for markets engaged in volume feeding. Contains pictures, specification data and descriptions of many types of cabinets on wheels, including hot and cold cabinets. Another section show racks on wheels for preparation and processing purposes. Also covers hand lift units for catering service, food carts on wheels for plant coffee breaks. *Crescent Metal Products, Inc.*

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Industrial Wheels

Specification folder describes line of aluminum alloy wheels with molded on rubber tires. Lists standard wheels available in spoke or disc type castings, equipped with ball, or roller bearings. Also outlines a selection of tread compounds for special service requirements. *Bronco Products Co., Inc.*

... FOR YOUR COPY, CIRCLE NO. 266

Steel Framed Trucks

Three-color condensed catalog in folder style of line of steel framed hand trucks. Discusses construction, frame, structure and undercarriage. Includes specifications of types for general purpose, freight and cargo, warehouse and barrel, cotton, cement or bag, dry goods and feed hand trucks. Also covers special purpose and platform trucks. *The Fairbanks Co.*

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Evolution of the Wheel

Story of line of wheels, casters, trucks and trailers illustrate the development of the wheel for modern uses. Describes casters that can handle loads up to 16,000 lbs. per caster at in-plant speeds and retractable casters for many landing wheel applications. Pictures trucks and trailers for light and heavy duty materials handling. *Saginaw Products Corp.*

... FOR YOUR COPY, CIRCLE NO. 268

Floor Truck Catalog

Colorful new 56-page catalog of industrial and institutional floor trucks presents expanded line of four-wheel platform, box, shelf, wagon and two-wheel trucks, dollies, semi-live skid systems and trucks for special uses. New items introduced include trailers and couplers, barrel drain racks, lever dollies, fiberglass box trucks, millwright and cylinder trucks. *Hamilton Caster & Mfg. Co.*

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Hand Trucks, Facts and Factors

How to select the right truck for the job is the opener of this booklet which outlines some of the pertinent factors to be considered in truck selection. There is a discussion on studying the load, a typical example, recommended truck sizes, operating conditions, automatic pallet hand lift trucks, how pallet system works and lift truck specifications. *Automatic Transportation Co., Div. Yale & Towne Mfg. Co.*

... FOR YOUR COPY, CIRCLE NO. 270

Hand Trucks for Various Purposes

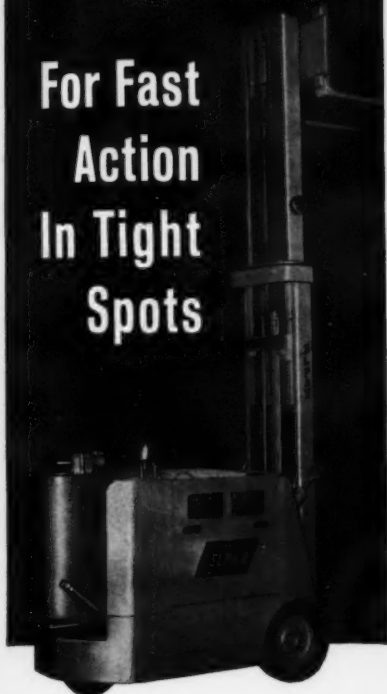
Catalog, 35 pages, containing illustrations of 150 different models of floor trucks for various uses. Includes general purpose and stevedore trucks, tubular steel and monument trucks, box trucks, dollies and piano mover trucks, wagon type and warehouse trucks, platform and roll trucks, box and shelf trucks, skids, barrows, carts, casters, semi-steel and rubber tired wheels. *Orangeville Mfg. Co.*

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ELPAR

"Cargo Scout"

For Fast
Action
In Tight
Spots



■ SHORT TURNING

Short wheelbase, rounded rear corners and 180° turning angle of ELPAR's "Cargo-Scout" assure maximum maneuverability in narrow aisles, crowded docks and other confined spaces!

■ HIGH SPEED

ELPAR's high speed lift and travel plus fast acceleration assure more work in less time.

■ SAFETY

The stand-up operator's position on the ELPAR "Cargo-Scout" means he can get off fast in emergencies. Duplicate hand and foot controls make it easy to drive this truck backward when bulky loads limit forward vision.

4 models - 2, 3, 4, & 5,000 lbs.

Write For Descriptive
Catalog—Specify
capacity required.



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CENTRIFUGAL CASTINGS

CENTRIFUGAL ... the name that more and more manufacturers throughout the West recognize as a mark of superior quality in centrifugal castings. They know that **Centrifugal** means superior strength, greater density and cleaner metal. They know too, that at **Centrifugal**, quality control is rigidly maintained through every step of the process. Precision control of melting, pouring, spinning speed and temperature insures dependable consistency job after job. The **Centrifugal** plant is one of the largest and best equipped in the West, and includes facilities for testing, machining, heat treating and sand casting. All this adds up to one thing. **Centrifugal** is the name to remember for better castings at a better price.

Free brochure ... For complete details see the new **Centrifugal** brochure and learn how you can save time and money with the improved quality of your centrifugal castings. Why not write today?



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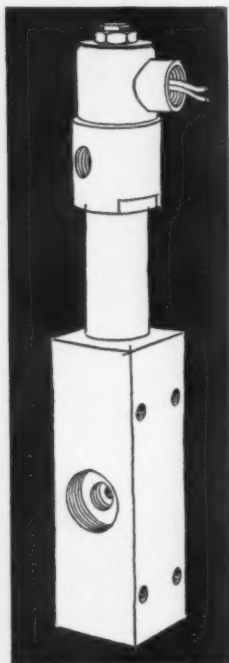


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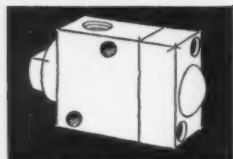
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Magnesium Hand Trucks

Bulletin describes lightweight line of hand trucks that weigh as little as nine lbs. yet handle loads up to 450 lbs. Pictures seven basic trucks of line of over 200 different models. Also, visuals of accessories for unique uses such as stair climbers, and a retractable third wheel. *Magline Inc.*

... FOR YOUR COPY, CIRCLE NO. 272

Material Handling Equipment

Ready reference catalog of material handling equipment includes casters and wheels, hoists, trolleys, electric hoists, chains, slings, fittings, cranes and lifts. Contains photos, specifications and brief descriptions of some of the units that more commonly serve industry. *Stanley E. Morris Co.*

... FOR YOUR COPY, CIRCLE NO. 273

Heavy Duty Trailers

Catalog illustrates wide variety of heavy duty type of equipment from two-ton caster trailers with rubber or pneumatic tired wheels to heavy duty trailers of dual wheel trailers with pneumatic tires for from one to five-ton capacities. *Ohio Galvanizing & Mfg. Co.*

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Hand Floor Trucks

Fifty-two hand operated floor trucks for loads up to 5,000 lbs. are pictured in this brochure, including platform and bin types, wagons, drag-line carts, dollies, semi-live skids or shelf trucks. A description under each of the pictured models covers its specialized feature and usage. *Lewis-Shepard Products, Inc.*

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Industrial Handling Trucks

A diversified line of industrial handling trucks with load capacities from 350 to 1100 lb., the weight of each cart under 10 per cent of its load capacity, is pictured and described in this brochure. Also presents supermarket-type carts for use in assembly, office, mail delivery and light stocking. *Technibilt Corp.*

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4,000 Pound Capacity Lift Truck

Literature gives full information about lift truck designed especially for the building material manufacturer and dealer. Photos show the truck in action inside the warehouse and also in handling concrete or clay pipe. Lists 14 features of the lift truck as well as complete specification data. *Champ Corp.*

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Versatile Speed Trucks

Brochure describes lightweight, speedy industrial truck for economical handling of boxes, bags, produce, drums and freight. Chart of seven models gives length, width, height and weight as well as full specifications including maximum speed of seven miles-per-hour forward and five miles-per-hour reverse. Weight capacity is 600 to 800 lbs. depending on load center and floor conditions. *Kalamazoo Mfg. Co.*

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WAGNER Dry-Type General Purpose Transformers

...WHISPER

WHILE THEY WORK

New... from Wagner... totally enclosed dry-type transformers filled with epoxy compound. Their designation: Type AE Single Phase, 1 to 10 Kva.

Use these transformers for all general purpose applications, including those where noise must be minimized. They have a low sound level... the result of encasing smaller Form W core and coils in solid epoxy compound. The compound insulates, reduces sound-producing vibration caused by core excitation... and provides enough support and mechanical strength to eliminate the need for metal framework and other sub-assemblies that are subject to vibration. *The result:* a whisper-quiet transformer that can be used anywhere, even in quiet areas of offices and hospitals.

Wagner Type AE transformers do more than silence sound, of course. They improve voltage regulation, and have better insulation protection (suitable for continuous operation at 80°C in a 40°C ambient). All parts are sealed from dust, moisture and corrosion by the epoxy compound. Naturally, every unit is built to conform to all applicable standards of ASA and NEMA.

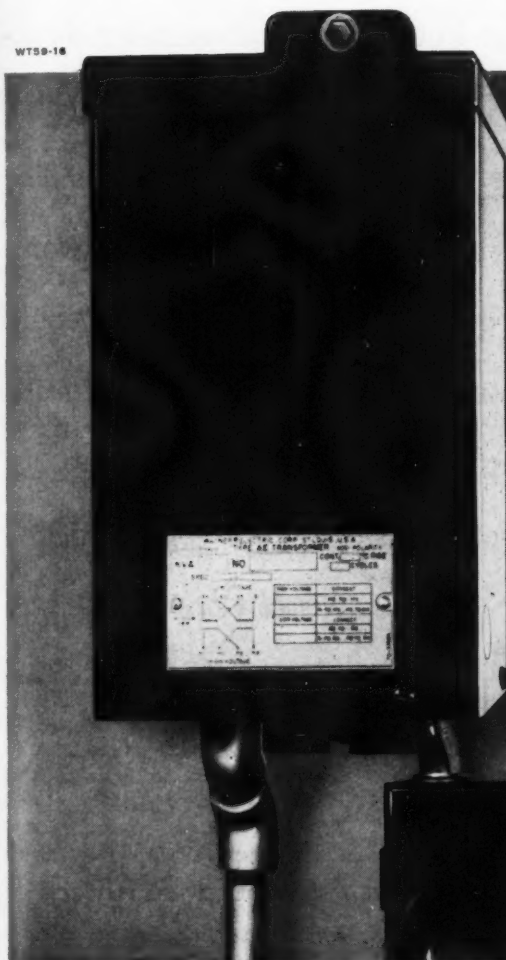
Wagner Type AE transformers can be installed indoors or out... in any location where they will not be submerged or exposed to injurious fumes in concentration. They are compact and lightweight and can be mounted in any position, at any angle... on walls, floors, or ceilings.

Like to know more? Wagner branches and distributors have all the details. There's one near you. Call or write now.

Wagner Electric Corporation

6493 PLYMOUTH AVE., ST. LOUIS 33, MO., U. S. A.

WT59-16



SPECIFICATIONS









Type AE—Single Phase—1 to 10 Kva
80° C Rise, 60 Cycles

High Voltages: 120 x 240; 240 x 480; 600 volts, no taps; 480, 600 volts, 2—5% taps below normal.

Low Voltage: 120/240 volts.

KVA	DIMENSIONS IN INCHES			NET WEIGHT POUNDS	AVERAGE SOUND LEVEL DECIBELS
	Height	Width	Depth		
1	10 $\frac{1}{16}$	6 $\frac{3}{16}$	6 $\frac{3}{16}$	28	37
1½	11 $\frac{1}{16}$	6 $\frac{3}{16}$	6 $\frac{3}{16}$	34	38
2	13 $\frac{1}{8}$	6 $\frac{13}{16}$	7 $\frac{1}{16}$	46	38
3	14 $\frac{1}{8}$	6 $\frac{13}{16}$	7 $\frac{1}{16}$	62	39
5	15 $\frac{1}{16}$	9 $\frac{3}{4}$	9 $\frac{1}{4}$	93	39
7½	16 $\frac{1}{16}$	9 $\frac{1}{16}$	10 $\frac{7}{16}$	130	39
10	17 $\frac{1}{8}$	11 $\frac{1}{8}$	10 $\frac{1}{4}$	167	39

Maybe zirconium copper wire is your answer

Looks like ordinary wire, but it's new and rather special. Amzirc®—zirconium copper, Cu 99.88%, Zr .12%—combines  high electrical conductivity (90 to 95% IACS at room temperature) and strength  retention at elevated temperature  in the aged condition. Tensile strength of zirconium copper cold worked 80% and aged is about 70,000 psi at 20 C—52,000 psi at 400 C in a short-time test. Naturally, it has attracted interest in the  missile field. We just recently finished drawing a batch of .0179" wire for testing as a conductor in some missile components, and now know that even smaller diameters can be made. We also know it has excellent hot- and cold-working characteristics. But we don't have all the answers yet—nor does anyone else. The reason we call it to your attention is that you may have a problem that won't wait until we can  it as a completely proven product. Possibly we could work together in finding the answer. Our Metallurgical Department and mills are working with many copper alloys offering a variety of unusual property combinations. The answer might be Amzirc—or *Cunisil-837*, our copper-nickel-silicon alloy—or *Chromium Copper-999*—or *Leaded Nickel Copper-831*. All have a potential for special  electrical  applications. 

If you are looking for metals to do new jobs—or to do present jobs better—tell us the combinations of properties you need. Call in your American Brass Company representative or write: The American Brass Company, 14900 Garfield Avenue, Paramount, Calif. In Canada: Anaconda American Brass Ltd., New Toronto, Ontario.

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HELPFUL LITERATURE

FOR THE WEST'S PLANT OPERATING EXECUTIVES

FOR YOUR FREE COPY CIRCLE APPROPRIATE KEY NUMBERS ON POSTCARD, P. 90

SQUIRREL-CAGE MOTORS

Bulletin describes doubly-protected drip-proof and totally enclosed poly-phase squirrel-cage motors, 1 hp and larger, with NEMA "C" faceplate for close-coupled centrifugal pump applications. Covers features that make the motors prime working partners with close-coupled centrifugal pumps. *Wagner Electric Corp.*

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AIR FOR INDUSTRIAL NEEDS

Compressed air for industrial requirements is the subject of this 16-page brochure. Contains detailed discussion of construction features of new line of industrial air compressors ranging from 100 to 400 hp ratings, in one, two, and three stage units. Includes cut-aways and analysis of component parts. *Cooper-Bessemer Corp.*

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BELT CONVEYOR IDLER

An improved idler consisting of a series of neoprene discs molded to a neoprene-covered, flexible steel wire cable suspended from two end-mounted bearings is described in this 20-page bulletin. Covers complete specifications, a detailed description of construction features, installation photos, application instructions, and an explanation of advantages. *Joy Mfg. Co.*

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INDUSTRIAL FIRE HOSE

The properties and other technical data on industrial fire hose jacketed 100 per cent with Dacron are set forth in this new bulletin offered as possible helpful material in experimentation. Contents include strength, comparative weights, water absorption, abrasion resistance, micro-organism and insect resistance, and chemical resistance data. *E. I. du Pont de Nemours & Co.*

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POWER TOOLS

Two-color, 64 page catalog contains illustrations and product listings of power tools for industrial production, plant maintenance, construction, automotive service, wood and metal-working. Includes saws, blades, hammers, planes, routers, sanders, drills, drivers, wrenches, shears, polishers, grinders and accessories. *Skil Corp.*

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NON-FERROUS METAL MELTING

Bulletin describes and illustrates complete range of non-ferrous metal melting furnaces including pot, crucible, double chamber dry hearth and large capacity reverberatory furnaces. Covers furnaces ranging in capacity up to units capable of melting 60,000 lb. of aluminum per hour. *Hevi-Duty Electric Co.*

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INSULATED RISER SLEEVES

A recently developed insulated riser sleeve for non-ferrous castings is described in this folder. Illustrates through photos and tabular data how the sleeve improves non-ferrous castings. Physical data on the sleeve includes composition, density, linear shrinkage, thermal diffusivity, dimensional tolerances and transverse strength. *Johns-Manville Corp.*

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SPEED REDUCERS

Brochure illustrates and describes a speed reducer designed to accept NEMA "C" face mounted motors, 1/8 to 5 hp. available with or without motors. Discusses advantages, lists 10 features, includes photos and schematic of foot mounting and flange mounting. Includes specifications and ratings as well as dimensions of the reducer and gear motor. *Janette Electric Mfg. Co.*

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COATED ABRASIVES CHART

A coated abrasives selector chart has been specially prepared for the textile industry. The large red, white and blue wall chart carries recommendations for coated abrasives to be used in the card room, the carpenter shop, machine shop, mill maintenance and safety, and the roller shop of textile mills. *The Carborundum Co.*

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HIGH VELOCITY DRYERS

Three new model high velocity dryers are introduced and fully described in this bulletin. Discusses flexibility in operation, manual or automatic control, air outlet velocities, temperatures and also covers general application in the paper, textile and other web treating industries. *J. O. Ross Engineering, Div. Midland-Ross Corp.*

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RELUBE BEARING UNITS

Catalog illustrates and describes new line of relube type bearing units, including low and high shaft height pillow blocks, four and two-hole flange units, and take-up units. Sets forth the 29 shaft sizes available, all units with malleable housings. The 19-page catalog also contains detailed specifications, comparison charts and load ratings. *Brown Mfg. Co.*

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ASEPTIC CANNING SYSTEM

A short time high temperature method of canning food and dairy products that retains natural color, flavor and nutritive values is described in this illustrated brochure. Discusses sterilization of the product in a closed heat-exchange system, aseptic filling and sealing operations. Includes specifications and schematics of several floor plan models. *James Dole Engineering Co.*

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LITERATURE ADVERTISED IN THIS ISSUE

Steel flooring that has no pockets, sheds dirt & water. *Alan Wood Steel Co.*
Page 14 Circle No. 10

Hose connection is leakproof, disconnects quickly from sockets. *Perfecting Service Co.*
Page 112 Circle No. 73

Tractor shovels with more power, greater capacity, better design. *Yale & Towne Manufacturing Co.*
Pages 30 & 31 Circle No. 14

Blind rivet for all purposes cuts assembly costs. *Universal Molding Co.*
Page 109 Circle No. 69

Electric trucks cost less when job selected. *Ready-Power Co.*
Page 97 Circle No. 56

Air control needs dependable valves, metering pumps, and cylinders. *Air-matic Valve, Inc.*
Page 68 Circle No. 35

Tractor-shovel is key to plant handling system. *Frank G. Hough Co.*
Page 107 Circle No. 67

Sewer pipe, sturdy and durable, has top flow capacity. *Armco Drainage & Metal Products, Sub. Armco Steel Corp.*
Page 65 Circle No. 32

Compressed air systems, custom engineered to requirements. *Compressor Service Co.*
Page 106 Circle No. 65

Overhead crane, engineering and application data booklet. *Cleveland Tramrail Div., Cleveland Crane & Engineering Co.*
Page 32 Circle No. 15

Material handling encyclopedia for engineers, executives. *Link-Belt Co.*
Page 41 Circle No. 23

Hydrodynamics booklet covers pumps, generators and controls, compressors. *Fairbanks, Morse & Co.*
Page 36 Circle No. 19

Conveyor handbook on how standard components cut installation costs. *Standard Conveyor Co.*
Page 99 Circle No. 58

Control valves, pilot operated, guaranteed against coil burnout. *Bellows-Valvair Corp. of Calif.*
Page 17 Circle No. 12

Strapping tools, pneumatic, cut strapping time 50 per cent. *A. J. Gerrard & Co.*
Page 95 Circle No. 54

Fluorescent fixtures for industry, specifications, performance, data. *Smoot-Holman Co.*
Page 79 Circle No. 43

Speed reducers, torque-arm shaft mounted, 55 models. *Dodge Mfg. Corp.*
Page 8 Circle No. 6

Welder unit has perfect balance even during crater elimination. *Miller Electric Mfg. Co., Inc.*
Page 98 Circle No. 57

Rubber products booklet on formulations for specific industrial needs. *Goodyear Rubber Co.*
Page 100 Circle No. 59

Motor reducers in horizontal, vertical and right angle types for every use. *Falk Corp.*
Page 5 Circle No. 3

Brazing booklet covers design for joining in controlled atmosphere copper furnace. *Fabrilform*
Page 74 Circle No. 39

Electric truck especially for maximum maneuverability in narrow aisles. *Elwell-Parker Electric Co.*
Page 67 Circle No. 33

A primer, rust and dampproof, for use on metal discussed in special report. *Rust-Oleum Corp.*
Page 33 Circle No. 16

Storage shelving that is adaptable and adjustable without tools. *Columbia-Hallowell Div., Standard Pressed Steel*
Page 13 Circle No. 9

Adjustable speed drive with simplified transistor-magnetic amplifier control. *Louis Allis Co.*
Page 63 Circle No. 31

Coatings for roofs, floors, where there is a dampproofing problem. *Pioneer Div., Flintkote Co.*
Page 110 Circle No. 70

Tube size recovery chart makes possible selection of exact tubing O.D. and bore. *Kilsby Tubesupply*
Page 51 Circle No. 25

Radio pager transmits messages to key personnel directly, privately. *Motorola Communications & Electronics, Inc.*
Page 77 Circle No. 42

MOLYBDENUM SPECIFICATIONS

This molybdenum mill products specifications booklet covers complete compilation of unalloyed molybdenum and Mo-0.5 Ti alloy billets, bars, plates and sheets. The material specifications for each of these include scope, manufacture, chemical composition, structure, mechanical properties, dimensions, finish, inspection and other information. *Refractomet Div., Universal-Cyclops Steel Corp.*

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INDUSTRIAL SAFETY

Descriptive safety equipment catalog covers four types of protection: eye protection including spectacles, goggles, shields, welding goggles and helmets; respiratory; hearing; and head. Presents detailed product descriptions showing individual components, parts and descriptive charts recommending specific safety equipment for each hazard. *Willson Products, Div. Ray-O-Vac Co.*

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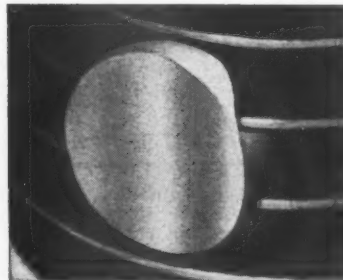
CONTROLLED SPEED SYSTEMS

Color brochure, illustrated with schematics, drawings and application photos, explains the controlled speed system principle. Shows how alternating current characteristics are used to provide adjustable speeds by converting fixed-speed AC motors to adjustable speeds on either existing or original equipment, regardless of whether one or many motors are involved. *U. S. Electrical Motors Inc.*

... FOR YOUR COPY, CIRCLE NO. 314

Only with **UNBRAKO...**

the pellet with positive locking power!



**Nylok* principle means
maximum thread area,
maximum screw strength**

Sure, screws are tight when first installed but can you count on them to stay tight? You can if they're self-locking UNBRAKO socket screws.

To make UNBRAKO socket screws self-locking, a tough, resilient nylon pellet is inserted permanently in the threaded section of the screw. It forces mating threads tightly together, locking the screw securely, seated or not, wherever wrenching stops.

Note that this pellet covers only a portion of two threads in order to perform its locking function. Only a pellet—with its compact shape—can retain maximum thread area. Specifically, here's how self-locking UNBRAKOS benefit you:

- Cut production time—by eliminating the need for lockwashers, drilling of heads for lockwires, cotter pins, and complex multiple set screw installations.
- Cut maintenance—by reducing time spent inspecting joints and tightening loose fasteners.
- Cut downtime—won't budge even in the face of severe impact, shock, vibration.
- Cut damage to machinery, which results when screws come loose.

UNBRAKO socket screws with Nylok are easily removable, repeatedly reusable (pellet seeks to regain original shape when removed). For complete information, see your authorized industrial distributor or write SPS—manufacturer of precision threaded fasteners and allied products in many metals.

*T.M. Reg. U.S. Pat. Off., The Nylok Corp.




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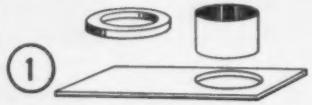
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SLOW-SPEED GEAR MOTORS

Bulletin pertains to slow-speed gear motors and slow-speed separate motor reducers. Describes and illustrates the features of the slow-speed design, the basic types and many modifications, as well as the universal mounting positions in which these units may be used. *Sterling Electric Motors.*

... FOR YOUR COPY, CIRCLE NO. 315

SEAL-LESS PUMP

Performance and special features of a new seal-less centrifugal pump for the leak-proof handling of volatile, toxic, inflammable or other hazardous liquids are presented in this illustrated bulletin. Covers construction, applications, specifications, a sectional schematic as well as a drawing showing dimensions. *Goulds Pumps, Inc.*

... FOR YOUR COPY, CIRCLE NO. 316

STRUCTURAL ADHESIVES

Three-color, fully-illustrated catalog contains complete information on line of structural adhesives and structural adhesive design concepts, joint designs and bonding methods. Includes technical data, tables and line drawings dealing with types and properties of film adhesives. Case histories illustrate assembly problems. *Minnesota Mining & Mfg. Co.*

... FOR YOUR COPY, CIRCLE NO. 317

MULTI-SPOT, PROJECTION WELDER

Brochure describes 32 multi-spot and projection resistance welding machines in detail. Data includes: end product, type of operation, production rate, welding machine specifications and material handling equipment. Features described include automatic loading, inspection, special welding techniques, spot, projection, and seam welds. *Taylor Winfield Corp.*

... FOR YOUR COPY, CIRCLE NO. 318

STEEL FOR FAST MACHINING

Bulletin gives engineering data on two new types of cold finished steel bars and a cold drawn steel tubing that are described as the fastest machining bar and tubular steels available. Cost and cutting speed comparisons, mechanical properties, chemical compositions, case histories, and data on tubing versus bar stock are included. *Joseph T. Ryerson & Son, Inc.*

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CYLINDRICAL ROLLER BEARINGS

Dimension, load and other application information is set forth in bulletin presenting a new line of cylindrical roller bearings. The three-color booklet discusses the design features and illustrates five variations of the bearings which are produced in three series. *Hoover Ball & Bearing Co.*

... FOR YOUR COPY, CIRCLE NO. 320

DIE HEAD CHASERS

Bulletin contains information, illustrations and charts pertaining to line of thread cutting, rolling, tapping and grinding machines and tools. Discusses tangential design, chaser interchangeability, rigid metallurgical standards, styles, cutting angles and, throat lead and rake angles. Covers chaser grinds and design. *Landis Machine Co.*

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WASHROOM CABINETS

Complete information on washroom dispensers and receptacles is contained in this full-color catalog. Descriptive information includes installation tips, architectural specifications, unit size and capacity. Special emphasis is given to recess cabinets featuring a dispensing unit that makes it possible to change towel folds without changing cabinets. *Crown Zellerbach Corp.*

... FOR YOUR COPY, CIRCLE NO. 322

MATERIAL-LEVEL INDICATOR

How material-level indicators accurately and automatically control level of pulverized, fine, crushed or granular material in bin or silo is the subject of this illustrated bulletin. Discusses a general purpose model and a specially-designed model for hazardous dust conditions. Includes schematics and illustrates typical installation. *Fuller Co.*

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UNITIZED CONVEYOR

Illustrated 22-page bulletin gives basic information for guidance in making proper conveyor selection for economical material handling. Describes pre-engineered standards such as gravity and power roller conveyors, inclined belt conveyors and drive units to enable quick and ready on-the-job installation. Contains detailed descriptive matter and charts. *Standard Conveyor Co.*

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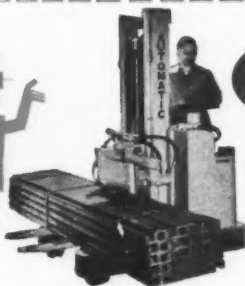
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SPLIT-BODY CONTROL VALVES

Publication introduces two new styles of split-body valves, each with its own angle variation. Reports that for the first time conventional split-body valves, having actuators perpendicular to the pipe line, are offered with a type having actuators at a 45-degree angle to the pipe line. Includes detailed specifications, data and dimensions of the various valve bodies with various actuators. *General Controls Co.*

... FOR YOUR COPY, CIRCLE NO. 325

STRUCTURAL BOLTING

New developments in structural bolting are presented in this 21-page booklet. Covers research and interesting facts on structural bolting, the concepts of high strength bolting, what it is designed to do and advantages. Gives full description and data on the new high strength bearing bolt, advantages in design, high clamping strength, great strength in shear, resistance to vibration and many others. *United States Steel Supply, Div. U. S. Steel Corp.*

... FOR YOUR COPY, CIRCLE NO. 326

FLEXIBLE COUPLINGS

New style applications and special couplings designed for specific conditions are included in new 48-page catalog. Misalignment is described, loads are classified and various types of couplings are grouped for easy selection. Photographs of installations, diagrams and table for each type of coupling as well as facts about dynamic balancing and bore and keyway standards are included. *Thomas Flexible Coupling Co.*

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DIAMOND TOOL USAGE

Illustrated booklet outlines a comprehensive line of diamond tools for the grinding industry featuring dressers, wheels and special tools. Metal bonded diamond impregnated quill wheels for holes as small as 0.039 and as large as 0.125 that will not load in hardened steels, tools designed to generate a radius in a grinding wheel and a table showing grit size and micron range for diamond powders are included. *National Diamond Laboratory of California.*

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GENERAL PURPOSE MOTORS

Benefits and features of a complete line of fractional horsepower general purpose motors are visually and verbally covered in this attractive publication. Included are capacitor-start, split-phase, permanent-split capacitor, shaded-pole and polyphase motors. Shows 16 different kinds of motors ranging from motors for machine tools to room air-conditioner motors in NEMA frame sizes 48 through 56. *General Electric Co.*

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WIRE ROPE SLINGS

Bulletin gives full information about wire rope slings that are equalized for flexibility and other advantages that are outlined and discussed. Includes general specifications covering length of sling, fitting measurements and rated capacity table. Sets forth rope construction of standard, flexible, special flexible and steel or hemp center as well of as type of splice. Includes description of a special plastic coated wire rope sling for certain applications. *Pacific Wire Rope Co.*

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Motorola closed circuit TV gives you

VISUAL CONTROL OF CRITICAL AREAS



Now—your key men can be at several places at once—without leaving their offices. They are right there on the spot, in control, in those critical areas throughout the plant—where work progress, materials flow, traffic conditions all call for their personal attention. With Motorola closed circuit TV, touch a button and the whole scene comes to life in the receiver on the desk. Think of the time and effort saved. Think of the increased efficiency!

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"Get your repair crew over to line 6—fast."



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Ask for a demonstration at the Material Handling Show in Los Angeles.

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WESTERN INDUSTRY/APRIL 1960

SWAGED VS. SCREWED FITTINGS

Information booklet on field-attachable screwed-together fittings for aircraft usage. Discusses aircraft hose assembly and functions of the swaged fittings. Summarizes burst tests of the two type fittings and outlines the advantages of the swaged-type. *Resistoflex Corp.*

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DUST AND PAINT MASKS

Illustrated brochure introduces two new masks, one for protection of the industrial worker against the hazards of non-toxic dust and the other designed to give the wearer protection from paint spray. Discusses mask properties and features of easy breathing, filtering efficiency and design advantages. *Flexo Products, Inc.*

... FOR YOUR COPY, CIRCLE NO. 332

PUSH-TYPE BROACHES

Illustrated brochure describes standard off-the-shelf round, square, hexagon and serration portable push-type broaches. Includes specifications and operating instructions for applying the push-type broaches to a wide variety of broaching applications in small shops with small arbor presses and existing equipment. *California Broach Co.*

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CRANES AND HOISTS

Brochure describes line of hoisting, rigging and lifting machinery designed to handle weights from a few pounds up to loads exceeding 1500 tons per lift. Lists, pictures and describes 100 various pieces of such equipment from cranes to various types to derricks, trolley hoists, wheels, trucks, lifters, tongs, hooks, slings and other lifting apparatus. *Downs Crane & Hoist Co.*

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DIMENSIONAL AIR GAUGING

Written especially for gauge designers, tool engineers, inspection and quality control personnel, this 50-page handbook describes in non-technical language how to select the right amplification for the gauging job. Also, when to use long-range air gauges, the advantages and principles of air gauging inside diameters, outside diameters and other geometrical conditions. *Sheffield Corp.*

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WESTERN INDUSTRY/APRIL 1960

Radio messages to your key personnel directly and privately!



... with MOTOROLA transistorized Radio Pager

A problem comes up. A key executive is needed on an important matter, a maintenance man is needed to make a repair on the line—now! He's "somewhere in the building" ... but no one knows exactly where. With Motorola Radio Paging, you can contact him in seconds—here's how: The switchboard operator sounds a tone in his Radio Pager (and his only). He is alerted instantly. He presses the button on his Pager and hears the full voice message. Total time elapsed ... just seconds ... and he's on his way to where he's needed. Executives, engineers, supervisors, maintenance men—all get their messages on Radio Pagers that slip in the pocket or clip to the belt ... cutting costs by increasing everyday efficiency and meeting emergencies faster.




Ask for a demonstration at the Material Handling Show in Los Angeles.

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CITY _____		ZONE _____ STATE _____	

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SAFETY MATERIALS HANDLING

Four major sections of safety materials handling equipment and accessories are included in this catalog: hooks for hoists, cranes and pullers; insulated links for cranes and hoists; mechanical back-up alarms for trucks and fork lifts and a new tractor alarm; safety truck steps and safety auto belts. *E. D. Bullard Co.*

... FOR YOUR COPY, CIRCLE NO. 336

BAR AND ANGLE SHEAR

Brochure describes a bar and angle shear, illustrating the progressive shearing action of the blade when shearing bar stock and angle iron. Outlines features including portability, versatile powering and cutting blade life. Covers specifications, standard and optional equipment and operation. *The Shearcase Co.*

... FOR YOUR COPY, CIRCLE NO. 337

PORTABLE TIER RACKS

How to discover more storage space in your present warehouse with portable tier racks is the subject of this two-color brochure. Application photos show stacking of irregular-shaped items; eliminating damage by compression; providing easy access for order selection; serving as a container; and easy assembly. *Select Pallet Co.*

... FOR YOUR COPY, CIRCLE NO. 338

SOCKET SCREW CATALOG

Illustrated 82-page textbook on the 2800 standard socket screw items includes both catalog data and extensive design and performance information on a family of fasteners used in virtually all industries. The technical reference book is intended as an aid for purchasing agents, design engineers and production. *Standard Pressed Steel Co.*

... FOR YOUR COPY, CIRCLE NO. 339

ELECTRON MICROSCOPE STUDY

Folder describing scientific investigations at Franklin Institute that involve a broad variety of electron microscope problems. Covers study of mechanisms of plastic deformation in metals and alloys using dislocation patterns; radiation damage in metals; strength of thin foils and perfection of evaporated films. Folder is illustrated with photographs. *Philips Electronic Instruments*

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INSTRUMENT SOCIETY REPORT

Booklet covers in detail the activities and accomplishments of the Instrument Society of America for 1959. Discusses technical programs and activities, standards, educational activities, conferences and exhibits. The 14-page report is attractively printed and illustrated. *Instrument Society of America.*

... FOR YOUR COPY, CIRCLE NO. 341

THERMOCOUPLE COMPONENTS

A newly designed line of thermocouple components for quick and easy connecting of thermocouples to extension wire is described in this bulletin. Pictures and outlines plug and jack assemblies, accessories, panel mounting components and various kinds of panels. Gives dimensions and descriptions. *Minneapolis-Honeywell Regulator Co.*

... FOR YOUR COPY, CIRCLE NO. 342

MICROFILMING METHODS

How modern microfilming methods are combined with high-speed xerography to serve the needs of engineering, industrial and other uses is described in this bulletin. Illustrated, the brochure shows how the system cuts storage space, eliminates transcription errors, provides security for records, and reduces paperwork procedure costs. *Delta Blue Print Co.*

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WELDER TRANSFORMERS

Technical brochure contains precise data on resistance welder transformers including construction techniques, transformer rating and load demand, magnetizing and load transients, application and duty cycle. Schematic diagrams, drawings and charts aid toward a basic understanding of resistance welder transformer design. *Taylor Winfield*

... FOR YOUR COPY, CIRCLE NO. 344

ARCHITECTURAL ALUMINUM

Complete technical and specification information on warehoused architectural aluminum is detailed and illustrated in this 24-page brochure. Covers structural shapes, extruded tubing, handrails, pipe rails, window sills, thresholds, bar and rod. Also contains data on alloys of plain, embossed and colored sheet available for architectural uses. *Reynolds Metals Co.*

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ULTRASONIC CLEANING

Brochure covers a line of new products developed specifically to meet the requirements of an integrated ultrasonic cleaning and rust-proofing system. The ultrasonic liquid cleaning concentrate is described as well as the factors involved in the selection of rust preventives for use after cleaning. *Rust-Lick, Inc.*

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ADHESIVES, LAMINATING LINE

Condensed catalog describes a complete line of adhesives, laminating materials, putties and sandwich core. Contains a temperature chart that indicates the upper and lower service limits for each adhesive and laminating material in the line. Discusses and illustrates each material. *Narmco Resins & Coatings Co.*

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SCOTCH MARINE TYPE BOILERS

Design and construction of a line of fully automatic, horizontal Scotch marine type boilers are described in this catalog. Includes specifications for nine sizes of gas or oil-fired boilers from 10 to 100 hp. for 100 or 125 lb. maximum working pressure, illustrates spiral turbulator feature designed to increase boiler tube efficiency. *Look-out Boiler & Mfg. Co.*

... FOR YOUR COPY, CIRCLE NO. 348

DRY ABRASIVE CUTTING

Folder describes new abrasive machine for fast cutting of solids, tubing and structurals of cold-rolled, alloy and stainless steel, cast iron and many non-ferrous metals. Discusses oscillation of the cutting wheel; variety of work holders for versatile operation and standards specifications. *Allison-Campbell Div., American Chain & Cable Co., Inc.*

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MOTOR-GENERATOR CHARGERS

Time-saving operation and maintenance procedures for automatically controlled vertical motor-generator chargers are provided in this bulletin. Sets forth easy-to-read instructions on daily operation and long-range preventive maintenance of the equipment in electric industrial truck and other motive power applications. *Exide Industrial Div. Electric Storage Battery Co.*

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CRANE CONTROL INSTRUMENT

An auxiliary crane and hoist control instrument designed for fast accurate load positioning, weight or strain indication, use as a rigging aid or as a portable testing device is described in this bulletin. Application photos, descriptions and illustrations of the various functions of the instrument are given as well as a discussion of its operation and general specifications. *Mefco Sales & Service, Inc.*

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WELDING ELECTRODE CATALOG

Illustrated, 24-page catalog includes complete line of welding electrodes, gas welding rod, non-consumable electrodes, submerged arc welding flux and automatic welding wire. In addition to a handy application diagram, the following data is given for each electrode: description, color code, outstanding features, mechanical properties, typical chemical analysis of weld metal, approvals, conformance, size, current range, packaging, procedure and typical applications. *Hobart Bros. Co.*

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IDLERS FOR BELT CONVEYORS

Engineering and product information booklet on belt conveyor idlers includes details of construction, comparison of 10 competitive designs, selection, procedure and examples, engineering tables, dimensions and specifications. The 48-page catalog illustrates and describes the basic types of idlers used in all types of service and presents detailed data on most of the standard 134 styles of idlers manufactured by the firm. *Hewitt-Robins Inc.*

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SCREW CONVEYOR GUIDE

Illustrated 60-page booklet features detailed, step-by-step information on how to select and engineer the proper screw conveyor setup to meet individual requirements in handling a wide variety of bulk materials including foods, chemicals and cement. This engineering and specification guide lists approximately 300 different materials which affect conveyor selection. *Fort Worth Steel & Machinery Co.*

... FOR YOUR COPY, CIRCLE NO. 355

ROLLER CHAINS, SPROCKETS

Over 2,000 types and sizes of stock roller chains and sprockets including standard and double pitch power transmission chains, a large selection of conveyor chains and attachments are listed in this 40-page, illustrated book. Key-indexed for easy reference, 18 pages are devoted to chains and a 20-page section covers the finished bore, taper lock, mandrel bore, removable segments and shear pin types of sprockets. *Link-Belt Co.*

... FOR YOUR COPY, CIRCLE NO. 354

SHAFT-MOUNTED SPEED REDUCERS

Modern methods of speed reduction with compact, shaft mounted units in a wide range of sizes and horsepowers are described in this 64-page bulletin. Besides an expanded line of torque-arm speed reducers for mounting on shafts of driven machines, the book presents reducers for flange mounting, vertical shafts, right angle drives and screw conveyor drives. Includes construction details, dimensions, prices and installation data with photos and engineering drawings. *Dodge Mfg. Corp.*

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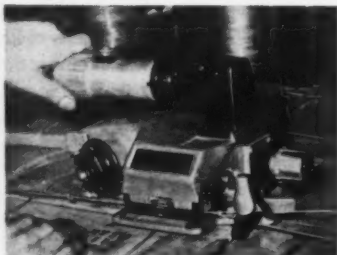


USE RIP OUT POSTCARD, PAGE 90, FOR MORE INFORMATION ON PRODUCTS DESCRIBED

STEEL STRAPPING MACHINE

... compact, pneumatic, for packing and materials handling

Simplicity is the keynote of design both in mechanical details and operation of this new air-powered strapping tool which tensions, ties and cuts round steel strapping in a three second operation. After threading the machine and draping the package, the operator merely turns a single control to tension, tie and cut the steel strapping. Handling the machine in production packaging can be facilitated through the use of suspension hooks and balancers. *U.S. Steel Supply*



... FOR MORE DETAILS, CIRCLE NO. 400

BELT SANDER

... with vacuum dust pickup attachment

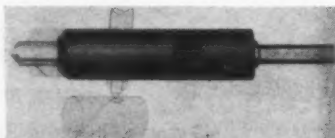
Dust-free sanding is a major benefit of this new model belt sander. Vacuum dust pickup attachment is 90 per cent efficient when sanding resins, lead or wood, allowing sanding and painting in the same general area. Belts sand faster and last longer because clogging is minimized. Contour sanding is easier because of exclusive soft sponge rubber pad. Design allows flush sanding up to vertical surfaces. Gearless transmission never needs lubricating. *Skil Corp.*

... FOR MORE DETAILS, CIRCLE NO. 401

UNIQUE DEBURRING TOOL

... for applications involving irregular hole surfaces

Deburring and chamfering of the angularly drilled holes in automotive crankshafts has always been a costly problem to auto manufacturers. The new deburring tool automatically follows the hole configuration and produces a chamfer of relative uniformity and symmetry. The operation is extremely fast, requiring neither jigs, fixtures or skilled operators. A conical pilot is easily directed in the hole using a low-speed, portable air drill motor. The deburring operation may be performed as parts progress along a conveyor line or while palletized between successive machine stations. *Nobur Mfg. Co.*



... FOR MORE DETAILS, CIRCLE NO. 402

CAULKING GUN LOADER

... for handy transferring of polysulphide type sealants

This loader was specifically designed for the construction and maintenance industries as a single and inexpensive device for transferring polysulphide type sealants from a gallon can into the caulking gun. Lightweight, the loader is completely portable and does not require electricity or air compression for its operation. The unit is transported to the work area and assembled on a scaffold, saw horse or planks. It is designed to accommodate a standard one gallon unit.

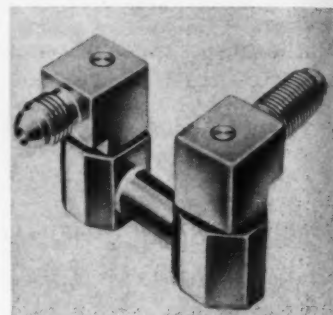
A. C. Horn Companies

... FOR MORE DETAILS, CIRCLE NO. 403

BALL BEARING SWIVEL CONNECTORS

... for aircraft, industrial pneumatic or fluid applications

This new line of ball bearing swivel connectors feature low rotating torque values under full operating pressure. Lightweight, and available in most materials, the connectors may be obtained in single or multiple swivels. Pictured is a twin



mounted swivel, designed and qualified in accordance with MIL-J-5513A. The connector is compact, made of stainless steel and weighs 9 ounces. It is bulkhead mounted to allow for misalignment of connecting lines. This design operates from 0 to 3000 psi, with proof at 4500 psi, and burst at 7500 psi. Temperature range is from minus 65 deg. F. to plus 275 deg. F. *Airaterra.*

... FOR MORE DETAILS, CIRCLE NO. 404

ANODIZING PROCESS

... creates lasting colors for architectural aluminum

A process that produces a superior anodic coating with a broad variety of colors and an exceptionally high degree of color stability and uniformity has been developed for architectural aluminum applications. The colors do not come from organic dyes but are created during the process through conversion of alloying elements within the metal itself. Available colors include gold, amber, tan, brown, olive, gray and black and the alloys are available as extrusions, and sheet for use in commercial construction. Field tests indicate perceptible fading or corrosion as well as abrasion resistance. *Kaiser Aluminum & Chemical Corp.*

... FOR MORE DETAILS, CIRCLE NO. 405

AT LOS ANGELES WELDING SHOW APRIL 26-28: BIG M&T CONTEST FEATURING 1960 AUTO AS PRIZE



newly engineered line of M&T welders

...many with unique features

Ready for you now is this newly engineered line of M&T MUREX welding machines. In addition to motor- and engine-driven generators and "CAPS"* controlled arc power sources, M&T offers efficient, long life welders for AC and DC operations, spot welding and inert gas arc welding for heavy, medium or light duty.

Made to equal or exceed the most rigid industry specifications, many of the M&T MUREX machines have unique design features that simplify operations for the weldor and lengthen life of the machine.

For example: AC welding machines have double wound transformers that give balanced output, better starting. Heavy duty production machines have a patented control that enables the weldor to adjust output by moving a sliding shunt only 1-inch for full range adjustment—no need for laborious cranking. The "Muretran,"* an all-purpose welder, permits tailoring the machine to the job at any time by means of timers that plug in like radio tubes.

Ask the M&T machine specialist to tell you more. Or send for set of data sheets.

*Trade Mark



**welding products • plating products
metals • coatings • chemicals**

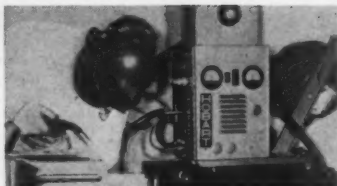
METAL & THERMIT CORPORATION, 270 Grand Avenue, So. San Francisco, Calif.
1926 E. Maple Avenue, El Segundo, Calif.

... for more details, circle No. 44 on Reader Service Postcard

HIGH SPEED WELDING

... uses continuously fed welding wire

Micro-wire welding, a new automatic high speed welding process for carbon dioxide shielded arc welding of sheet metal from 24 gauge to 1/4 in. thickness, is said to produce weld with a minimum of distortion and little or no post-weld cleaning. Equipment includes lightweight gun-cable assembly, wire feed unit, gas supply and regulation apparatus, and a power source of constant voltage or variable slope type. The gun of the gun-cable assembly is kept cool by atmospheric air and does not require water and heavy water hoses for cooling. *Hobart Bros. Co.*



... FOR MORE DETAILS, CIRCLE NO. 406

SPARE PARTS KIT

... for vertical battery chargers

A spare parts kit has been developed for Exide's line of vertical motor-generator chargers used with electric industrial truck batteries. Containing parts that commonly need to be replaced after long use in electric motor equipment, the kit provides a full set of brushes, two bearings and a fuse packed in a clearly labeled corrugated package. *Exide Industrial Div., Electric Storage Battery Co.*

... FOR MORE DETAILS, CIRCLE NO. 407

POWER STEERING KIT

... everything needed to make dependable hydraulic pressure

Newly introduced kit contains a handy coil of power steering hose and a variety of reusable fittings, everything needed to make dependable hydraulic pressure and return lines for power steering units on all makes of cars ranging from 1952 models to the latest, trucks, busses, material handling trucks, and many other types of industrial and farm vehicles. With this basic inventory a mechanic can assemble at a moment's notice power steering pressure and return lines to any length and the only tools required for assembly are a wrench and a vise. Simple instructions are illustrated inside the cover of the kit and the parts are identified to facilitate re-ordering of individual fittings, adapters, and hose. *Aeroquip Corp.*

... FOR MORE DETAILS, CIRCLE NO. 408

TRACTOR - SHOVEL

... full power-shift transmission with matched torque-converter

With an operating capacity of 3,000 lbs. and equipped with a one cu. yd., SAE rated bucket, this four-wheel-drive tractor-shovel is a new introduction in the firm's payload line. All shifts can be made in operation with no need to stop for range shifts since the machine has three speed ranges in each direction. Powered with a 77 1/2 hp heavy-duty gas engine, the machine features four-wheel hydraulic brakes in order to provide equal braking action in either direction. Brakes are sealed to keep out dust and dirt. Clearance is 8 ft., 4 in. under the cutting edge. *Frank G. Hough Co.*

... FOR MORE DETAILS, CIRCLE NO. 409

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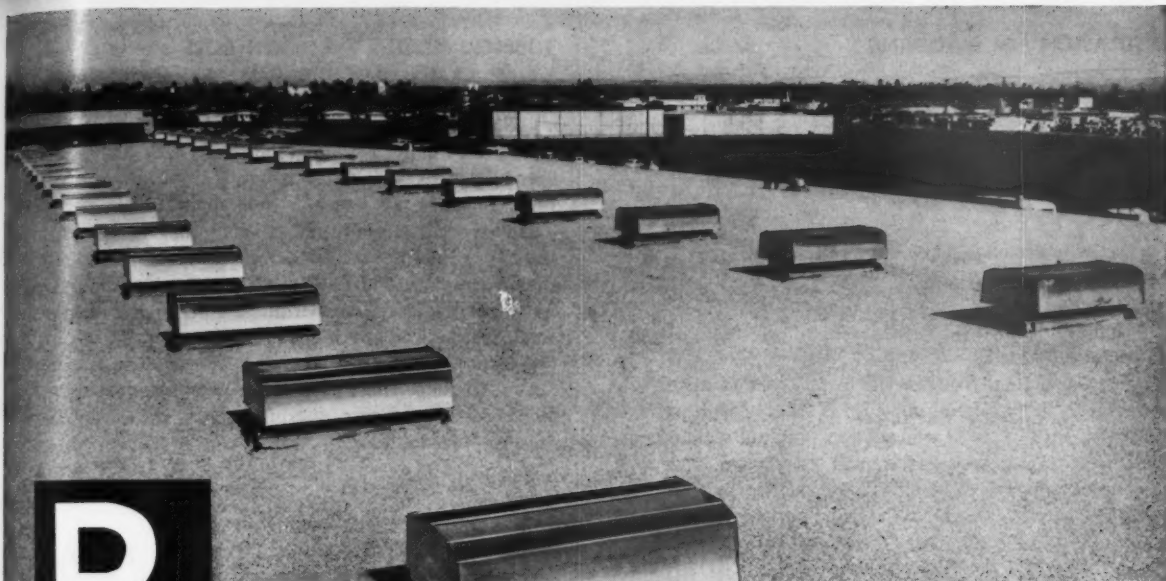
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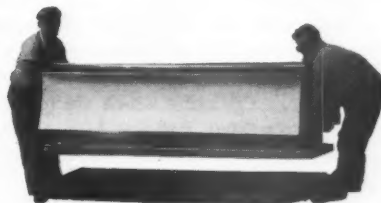
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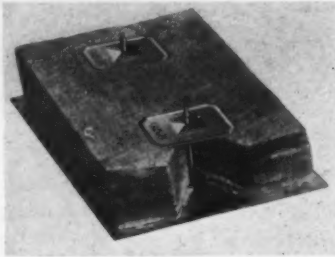
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WI-14

INSULATION PIN FASTENING

... pins can be welded into thin metal without distortion

An improved, time-saving method of permanently attaching interior and exterior insulation to metal has been developed in a simple, three-step process. First, pointed insulation pins are welded to the metal surface.



Two, the insulation is pressed onto the pointed tips of the pins. Three, the insulating material is secured with push-on insulation clips. This new insulation pin stud welding system offers rapid, secure fastening of regular and high temperature insulation to galvanized ductwork, aluminum ducts, industrial furnaces, refrigeration room facings, corrugated iron and steel plate. *Omark Industries, Inc.*

... FOR MORE DETAILS, CIRCLE NO. 410

ELECTRIC STEAM JET CLEANER

... provides three-fold cleaning action

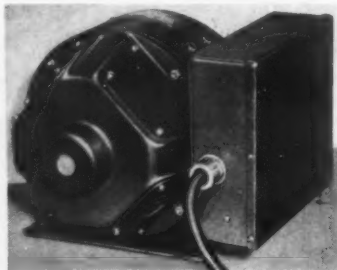
A new improved steam jet cleaner operates with a single hose and heavy duty swivel steam gun and can be used as an effective high pressure steam cleaner, with or without detergents, or quickly switched to a high pressure hot or cold rinse unit or a dry steam cleaner where excessive water is objectionable. Operating costs are held down since there are no coils to stop up, no heating elements to burn out, no flames or fumes and because of the exclusive automatic balanced control feature of the model, possible damage due to loss of water is eliminated. Once the unit has been switched on, it can be held at full operating pressure all day long ready for instant use. The steam-jet can be shut off or cut down by the operator at the gun. The steam-jet is often employed to clean and phosphatize larger metal surfaces prior to painting which are too large to be dipped or otherwise treated. *Pan-Tex Mfg. Corp.*

... FOR MORE DETAILS, CIRCLE NO. 411

AC - DC MOTORS

... with integral horsepower range

New line of integral horsepower AC-DC motors has been introduced for such applications as mobile field equipment in remote areas where either AC or DC supply may be encountered. Previous AC-DC applications could be met only by universal motors, and these were restricted to fractional horsepower sizes operating at speeds over 5,000 rpm. The new line is available in ratings through 7½ hp in 1800 and 1200 rpm speeds. The design involves standard open ventilated motors packaged with four silicon rectifiers in a bridge circuit which does not require reconnecting for each type of current. *Robbins & Myers, Inc., Industrial Motor Div.*



... FOR MORE DETAILS, CIRCLE NO. 412

TUBELESS MOTOR SPEED CONTROLS

... for use with ¼ and ½ hp shunt wound motors

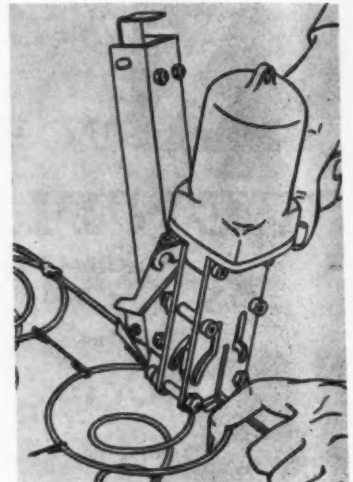
Full wave control may be switched from forward to reverse at any motor speed setting and speed range is 18:1 at full rated motor torque in the new line of compact motor speed controls, a heavy duty unit requiring no warm-up time. Internal relays and a time delay circuit permit reversal to occur in the fastest possible time with no strain on the motor or control. Silicon rectifiers supply full wave d-c to the armature and field circuits. Armature filter system improves regulation and permits the motor to run smoothly at all speeds. The motor speed is controlled by varying the armature voltage with an auto transformer. Case is of heavy 16-gauge steel and front panel is constructed of etched aluminum for durability. Net weight is 16 lbs. *Minarik Electric Co.*

... FOR MORE DETAILS, CIRCLE NO. 413

PORTABLE CLIPPER

... air-powered, magazine-fed clip applicator

Designed primarily for the furniture and bedding manufacturing industries, this newly developed clipper is described as useful wherever two wires must be secured to each other in a manufacturing process. The new machine, which can apply a clip in less than two seconds, outmodes the former hand method in certain manufacturing operations in which a clip has to be placed over two wires and then closed manually with pliers. Weighing 5¾ lbs., the tool is available in two models, one for joining 7 through 11 gauge wires and another for joining 11 through 13 gauge wires. *Paslode Co., sub. Signode Steel Strapping Co.*



... FOR MORE DETAILS, CIRCLE NO. 414

AIR-OPERATED "C" CLAMPS

... with manual sleeve or integral solenoid valves

In response to market research showing a definite need for a complete line of air-operated "C" clamps, two lines have been introduced. One line is a heavy-duty series for exceptional strength and durability and the second line is an economy series for average applications. The clamps are available with a manual sleeve valve or with an integral solenoid valve for automation applications. Various power factors are available. Also, the clamps are offered with a number of optional clamping ends. For example, one clamp in the line has a zero to six-inch adjustable opening with a depth of 3¼ inches and the cylinder has a 7:1 power factor. Other clamps in the line have maximum openings of 7, 8 and 9 inches. *Airmatic Valve Co.*

... FOR MORE DETAILS, CIRCLE NO. 415



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VAN D. CLOTHIER
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Consultant

Meet the men from Wolverine Tube

Increasing demand for its tubing has caused Wolverine Tube to enlarge its west coast sales and marketing facilities. Wolverine customers are now being served from district sales offices located in both Los Angeles and San Francisco.

For many years Wolverine's complete line of tubing has been distributed by Van D. Clothier, Inc. It is a pleasure for Wolverine to announce that Mr. Clothier continues his Wolverine association as sales and marketing consultant in the area.

Heading up the new district sales offices are two Wolverine veterans—J. A. (John) Marshall, district sales manager, San Francisco district and H. F. (Fil) Powell, district sales manager, Los Angeles district. These men, along with their associates, are highly trained tubing specialists, are fully competent to discuss all phases of your tubing requirements.

Call them whenever you need any of the following Wolverine products:

Refrigeration & Air Conditioning Tube
Commercial Tube
Aluminum Tube & Shapes

Copper Drainage Tube
Copper Water Tube (K-L-M)
SPS Pipe

Wolverine Capilator®
Spun End Tubular Parts
Fabricated Tubular Parts
Prime Surface Condenser Tube
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J. P. (JIM) MOORE
Seattle, Washington

LIMIT SWITCHES

... designed for high-speed, precision production machines

Oil-tight, a new family of limit switches has been introduced for installations where high impacts and adverse environmental conditions are recognized as major factors in standard limit switch failure and subsequent machine downtime. Each switch is sealed to positively check seepage of oil, coolants, moisture and abrasive grit. External seals are located at the operating shaft bearing and between the cover plate and contact assembly. An internal seal between the operating head and switch base provides double insurance against the entrance of liquids into the contact cavity. Unique in the design is enclosed but visible contacts through use of a new thermoplastic material. *Cutler-Hammer, Inc.*



... FOR MORE DETAILS, CIRCLE NO. 416

CLASS XXXX SETTING MASTERS

... made to tolerances as fine as five millionths of an inch

New finer tolerance Class XXXX master setting rings and discs used to calibrate high-amplification air gauges and other types of precision measurement instruments have been announced. The finer accuracy of the rings and discs permits air and electronic gauges to be set to classify parts in increments of less than five millionths of an inch. The Class XXXX rings and discs within size range .125 in. to .825 in. are calibrated and certified to accuracy of .0000025 by the firm's metrology lab. The rings are also inspected for circularity, taper and bellmouth. Dimensional size as well as deviation from circularity are recorded on a certificate of inspection accompanying each ring. *Sheffield Corp., sub. Bendix Aviation Corp.*

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86

PANEL WALL SYSTEM

... lightweight load-bearing steel structure

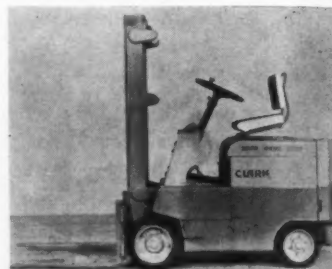
A new concept in wall design for one and two-story structures features a lightweight load-bearing steel structure, colorful porcelain curtain wall panels that slip into place on the structure itself, plus aluminum extrusions and attachments. Not a conventional curtain wall system, it is specifically designed to go up faster, easier, and at considerable savings. Lightweight steel framing is load-bearing, eliminating the need for heavy structural beams and columns. Savings can be realized on foundations due to lightweight components and on erection because of the simplicity of the system. Framing is quickly and easily assembled by welding or self-tapping screws. Panels are slipped into slots and grooves in the framing itself. A distinctive nailing groove in the steel framing itself makes it easy to attach collaterals to the exterior or interior walls. *Stran-Steel Corp., Div. of National Steel Corp.*

... FOR MORE DETAILS, CIRCLE NO. 418

BATTERY-POWERED FORK TRUCK

... 4,000 lb capacity, carbon pile drive control

This new cushioned-tire, rider-type electric truck is equipped with carbon pile drive control, a development which provides constantly smooth acceleration. Working through a hydraulic circuit, carbon pile control permits steady, stepless acceleration for operations where loads must be placed delicately. High torque, required for fast acceleration, is provided by dual field series windings in the drive motor. Dual fields improve efficiency of operation throughout entire speed range. The truck is engineered for easy maintenance. Fully loaded, it can climb a 10 per cent grade and can travel up to 6.2 fpm forward or reverse. *Clark Equipment Co.*



... FOR MORE DETAILS, CIRCLE NO. 419

IMMERSION THERMOCOUPLE

... expendable, for measuring molten metal temperatures

Primarily designed for measuring steel temperatures in both open hearth and electric furnaces, the new thermocouple may be used with equal efficiency with other molten metals. The unit combines improved economy, faster response, high accuracy and simplified assembly. The expendable design is simple consisting of a ceramic base which serves as a mounting for the noble metal thermocouple wires. A firmly anchored transparent fused silica tube protects the thermocouple wires and is, in turn, protected from slag and floating solids by a special metal cap. The cap absorbs the physical shock of immersion and melts away immediately after it has plunged beneath the slag. Special design of the thermocouple unit and its receptacle allows the unit to be assembled without requiring alignment of contact pins. *Engelhard Industries, Inc.*

... FOR MORE DETAILS, CIRCLE NO. 420

WESTERN INDUSTRY/APRIL 1960

RUGGED DUTY TORCH

... large flow capacity for heavy cutting under all conditions

A cutting torch with flow capacity which enables it to cut 24-in. steel also adapts to a wide variety of less demanding applications by use of different slip-in tips. A unique feature of the torch is an ease-on oxygen control valve which permits gradual introduction of cutting oxygen. This reduces slag spray and facilitates control in such processes as piercing, rivet washing and heavy cutting. The torch is equipped with an over-or-under cutting lever which is easily reversed for operator preference. Large gas tubes and a high pressure valve port permit the flow of the volume of gas required for heavy cutting. *Smith Welding Equipment*

... FOR MORE DETAILS, CIRCLE NO. 421

CARTON UNSTACKER

... can handle 40 to 45 cartons per minute

New unstacker utilizes air cylinders for hoisting, clamping and pallet movement instead of hydraulic cylinders. All conveyors, and the pallet stacker included as a part of the machine, are electric power driven. The air compressor with storage tank and the necessary piping and pressure regulators are furnished. Approximately 50 cubic feet per minute of air is required for operating. Advantages include the cushioning effect which prolongs life of both machine and cases, more cleanliness around the machine as no oil films are present to collect minute dust particles, and greater freedom from other than routine maintenance. *Standard Conveyor Co.*

... FOR MORE DETAILS, CIRCLE NO. 422

THERMOSTAT CARTON

... doubles as a shipping container and counter display

A carton, designed with an indoor-outdoor temperature control system, incorporates a perforated false flooring which permits the two thermostats used in the system to be held securely in position. For display purposes, the multi-color carton top folds into an arched backdrop. When the top is closed, the carton is ready for shipping. The temperature control system senses outdoor temperatures and regulates indoor temperature accordingly, eliminating the need for manual adjustment of room thermostat settings when outdoor temperature changes. *General Controls Co.*


... FOR MORE DETAILS, CIRCLE NO. 423

REVERSIBLE 3/8-in. SCREW DRILL

... dual purpose tool has many uses

This double-purpose tool combines the properties of a drill and power screwdriver in a single, hand-held unit. As a drill the tool can be used with all kinds of bits, including twist drills up to 3/8-in., wood augers to 3/4-in., masonry bits up to 1/2-in. and hole saws from 5/8 to 1 3/4 in. A turn of the spindle collar on the tool converts it to a screw-driving clutch. As a screwdriver, the bit idles for finding the screwhead slot, then forward pressure of the tool engages the mechanism and drives the screw, releasing the driving pressure so as to prevent marring of the work surface. The screw drill can also be used for running up nuts by using shanks and sockets. A special feature is the reversing switch which permits quick removal of screws or nuts in disassembly operations. *Black and Decker.*

... FOR MORE DETAILS, CIRCLE NO. 424



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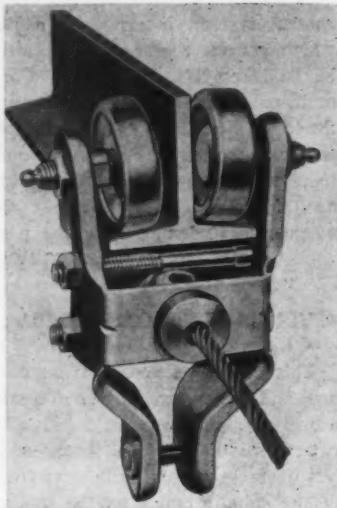


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CABLE TROLLEY

... 125 lb capacity for conveyor installations

This new 125 lb. capacity trolley which has been added to a line of 80, 160 and 250 lb. trolleys makes a savings possible on many conveyor installations which would have formerly required 160 lb. trolleys. A zerk fitting mounted on the stud provides for positive lubrication. The new model can also be substituted for 80 lb trolleys on existing systems, if more capacity is desired, or if zerk-type lubrication is preferred. The trolley rides on an inverted T-rail track. Trolley side-plates fit into grooves in the drive lugs and are bolted together. The drive lugs are factory-mounted on the cable while it is under working tension. Conveyor Div., *American MonoRail Co.*



... FOR MORE DETAILS, CIRCLE NO. 425

UTILITY TORCHES

... propane fueled all-purpose torch kits

Available in single cylinders with push-button to pencil-type tip assemblies, or in carry-all kits which include many of the accessories needed for soft soldering, paint burning, copper tube sweating, jewelry making and general applications requiring heat by plumbers, jobbers and hobbyists. Advantages include instant starting, long burning (up to 15 hrs. with one cylinder), self-sealing valves, no hose required, all-position burning, and disposable cylinders. *Air Reduction Pacific Co., div. Air Reduction Co., Inc.*

... FOR MORE DETAILS, CIRCLE NO. 426

PORTABLE COMPRESSOR

... for spray painting, many other uses

Constructed for extra long life, this portable compressor for use with spray painting systems comes in two models, for operating pressure of 50-60 psi., and for 70 to 80 psi. Also suitable for cleaning, tire inflation and other uses, both models use a heavy-duty 2.5 hp. engine and are designed for one-man operation on maintenance painting. Each is a 2-cylinder model, single stage, air-cooled with V-belt drive, constant speed unloader and splash lubrication. *Binks Mfg Co.*

... FOR MORE DETAILS, CIRCLE NO. 427

WORK PLATFORM

... eliminates need for scaffolding

Designed for fast, safe access to all overhead installation, inspection and maintenance work a new product line of work platforms has been introduced. Eliminating the need for time consuming, often dangerous scaffolding, the unit is recommended for indoor or outdoor use in factories, and warehouses. Available in several models with respective working heights of 21 ft., 26 ft., 30 ft. and 40 ft., the platforms are electrically operated with standby hand pumps. Completely mobile in the extended position, the units quickly fold into a compact unit for easy storage and passage through small doorways. *Ontario Equipment Co., Inc.*

... FOR MORE DETAILS, CIRCLE NO. 428

SUBMERGED ARC WELDING FLUX

... for single and multiple pass work at currents up to 1200 amps.

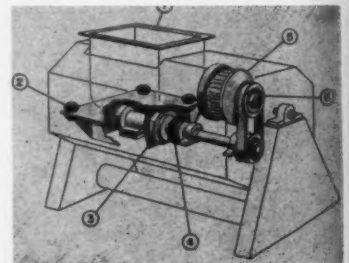
A production flux with the ability to sustain high travel speed with an X-ray quality deposit, this new submerged arc welding flux will work through moderate mill scale or rust on light or heavy gauge material and the slag is easy to remove. Typical physical properties when used with mild steel welding wire, .10 maximum carbon, are: yield (p.s.i.) 59,000, tensile strength (p.s.i.) 71,000, elongation 30%, and reduction of area 64%. Typical analysis under the above conditions are: Carbon .07, manganese 1.18, silicon .48. *Hobart Bros. Co.*

... FOR MORE DETAILS, CIRCLE NO. 429

VIBRATORY FINISHING MACHINE

... new line air-cushioned, utilizes suspension system

Centering about an air-cushioned vibratory finishing machine, this new line is distinguished by a suspension system long used successfully on busses and trucks. Four rubber air cushions are mounted above the vibrating platform, and four are mounted below. Each series is pneumatically interconnected or manifolded and the air pressures are read at the operator's panel. Varying the pressure within the air cushion system provides one means of regulating vibratory amplitude. Since no springs are used for suspension, metal fatigue and spring sag do not occur, and vibration at natural spring frequencies need not be avoided. *Pangborn Corp.*



... FOR MORE DETAILS, CIRCLE NO. 430

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SOLENOID VALVES

... new 3-position, 4 way dual valve, closed center position

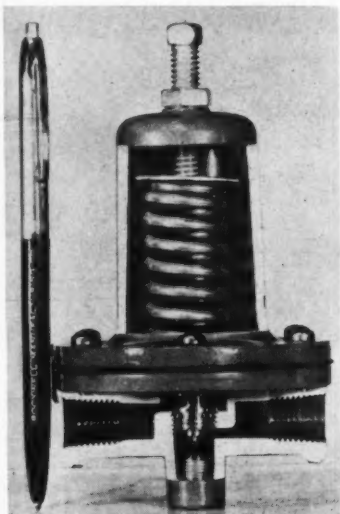
Four-way dual solenoid valves are designed to dependably control cylinders. Instantaneous in operation, only two moving pilot cores and four flexing diaphragms are utilized. There are no spools or closely fitted parts to create maintenance problems or malfunctioning. Sliding glands, stuffing boxes, stroke settings or seat regrinding also have been eliminated in this new design. Supplied with a rugged brass bar stock body and poppet type seats, the valve is available with $\frac{1}{4}$ in. or $\frac{3}{8}$ in. pipe connections. In the closed center position, when both solenoids are de-energized, flow is blocked to all orifices. The valve locks the cylinder piston at any point of the stroke. *Automatic Switch Co.*

... FOR MORE DETAILS, CIRCLE NO. 431

INSTRUMENT REGULATOR

... new device has many uses

Applicable wherever a controlled supply of air or gas pressure is needed, this new instrument regulator has a wide range of applications in commercial, industrial and utility operations. It is especially suited for air supply lines for production line equipment such as punch presses, pneumatic tool and paint sprays. Applications can vary from controlling inlet pressures on sensitive controlling, regulating, and recording devices to a first stage regulator for LPG systems. Constructed of pressure die cast aluminum, it has a maximum inlet pressure of 250 psi and outlet pressure ranges of 0-5, 5-35 and 35-100 psi. *Rockwell Mfg. Co.*



... FOR MORE DETAILS, CIRCLE NO. 432

COMPACT SPRAYWELDER UNIT

... spray rate over 12 lbs per hour, greater efficiency

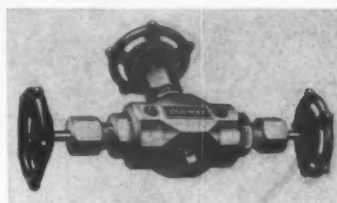
A high spray rate, exceptional deposit efficiency and a 20 per cent reduction in spray pistol weight are the features of this new model spraywelder. Major physical improvement in the redesign of the spraywelder pistol is simplification of controls. Former trigger and powder flow control have been combined into one simple positive-acting operating valve. Elimination of the trigger mechanism substantially reduces the space requirement, permitting a more compact pistol design and reduction in weight. The smaller, lighter powder metal spraying unit is easier to manipulate and less fatiguing to handle, factors of particular importance in manual spraying applications. *Wall Colmonoy Corp.*

... FOR MORE DETAILS, CIRCLE NO. 433

INSTRUMENT VALVE MANIFOLD

... combines three valves in a single body

Furnished with either screwed or socket-weld end connections, this new valve manifold was designed to simplify the means of making instrument connections to flow meters,



level indicators, and other types of instruments. The manifold combines three valves in a single body, two providing suitable line shut-off and one that equalizes pressures to protect the instrument's internal working parts, together with a connection tap for calibration of the high pressure side of the system. Body of the manifold and all working parts are of stainless steel. *Yarnall-Waring Co.*

... FOR MORE DETAILS, CIRCLE NO. 434

CONVEYOR TROLLEY LUBRICATOR

... operates automatically with floor level control

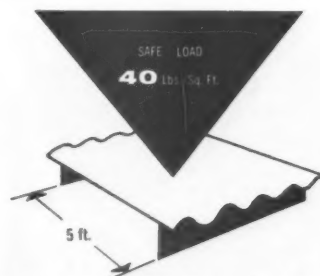
This new, fully automatic, air-powered trolley lubricator which is operated by remote controls from the floor level offers many advantages in solving conveyor lubrication problems. It assures correct lubrication of hard-to-reach trolley fittings, saves time and labor and eliminates dangerous climbing. The unit is self-adjusting and completely self-contained. It consists of left and right hand lubricating assembly, a 5-lb. capacity lubricant reservoir mounted on a 4-ft. I beam, and an electrical or pneumatically operated control panel. It is designed for fast, easy installation in existing trolley conveyors by simply cutting the beam and welding in place. The lubricator will handle standard conveyor wheels intermixed. *Aro Equipment Corp.*

... FOR MORE DETAILS, CIRCLE NO. 435

DEEP CORRUGATED STAINLESS STEEL

... economical roofing, siding material for industrial use

The deep corrugation feature of this new roofing and siding material provides more than twice the strength for the same gauge or weight of material and is therefore described as offering a saving in cost approaching 50



per cent, with reduction in weight exceeding that figure. Recommended for industrial buildings, warehouses and other structures in areas there are atmospheric corrosion problems, the material has a $2\frac{2}{3}$ in. pitch and $\frac{3}{8}$ in. depth, a departure from nominal dimensions. Cost savings utilizing the deep corrugated stainless steel may be accomplished by designing for typical purlin spacing and substantially reducing the gauge of stainless, or the gauge may be maintained and the distance between purlins widened. *Armco Steel Corp.*

... FOR MORE DETAILS, CIRCLE NO. 436



Four-year-old Thermoid-Quaker Petrochem fire hose works under 125 lbs. pressure near Potlatch Forests' caustic operation. Exposure conditions in this area ruined ordinary fire hose in only three months.

"Petrochem" Fire Hose took 4 years of the same abuse that ruined ordinary hose in 3 months!



Mr. C. O. Bing, Fire Chief, shows original test length of Petrochem hose after four years' use.

"Petrochem" fire hose, developed by Thermoid-Quaker, has outlasted ordinary fire hose 16 to one at Potlatch Forests' pulp and paper mill, Lewiston, Idaho. Mr. C. O. Bing, Potlatch Fire Chief, says, "The conditions around our caustic operation are as tough as you'll find anywhere. Just storage in this area ruined ordinary hose in three months. Petrochem hose, without washing or refolding, is still in excellent condition after four years in this rugged atmosphere." Service like this is customary for Thermoid-Quaker Petrochem hose

which is designed for the roughest, toughest treatment imaginable. Neoprene inner tube and neoprene-impregnated "Dacron" jacket give Petrochem corrosion and wear resistance to meet the severest conditions. And Petrochem is available with UL approval.

Ask your Thermoid-Quaker industrial distributor about Petrochem fire hose to meet the severest requirements of the oil and chemical industries. Or write *Thermoid Division, H. K. Porter Company, Inc., 200 Whitehead Road, Trenton 6, New Jersey.*

THERMOID DIVISION



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PORTER SERVES INDUSTRY: with Rubber and Friction Products—THERMOID DIVISION; Electrical Equipment—DELTA-STAR ELECTRIC DIVISION, NATIONAL ELECTRIC DIVISION, PEERLESS ELECTRIC DIVISION; Specialty Alloys—RIVERSIDE-ALLOY METAL DIVISION; Refractories—REFRACTORIES DIVISION; Electric Furnace Steel—CONNORS STEEL DIVISION, VULCAN-KIDD STEEL DIVISION; Fabricated Products—DISSTON DIVISION, FORGE AND FITTINGS DIVISION, LESCHEN WIRE ROPE DIVISION, MOULDINGS DIVISION, H. K. PORTER COMPANY de MEXICO, S. A.; and in Canada, Refractories, "Disston" Tools, "Federal" Wires and Cables, "Nepocoduct" Systems—H. K. PORTER COMPANY (CANADA) LTD.

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WESTERN INDUSTRY/APRIL 1960



WESTERN INDUSTRY NEWS

THE INDUSTRIAL WEST . . . ON IT'S WAY

PLANTS • PRODUCTION • DISTRIBUTION • PERSONNEL



Above is rendition by Architect George Vernon Russell, F.A.I.A., of Republic Supply Company of California's addition to their corporate offices and warehouse in the Central Manufacturing District at 2600 Eastland Ave., Los Angeles. The new 72,000 sq. ft. building shown in lower half of photo will house company's recently organized specialty metals division.

LOS ANGELES—Coinciding with the recent groundbreaking ceremony adjacent to the company's local plant, Republic Supply Co. of California announced its entry into the specialty metals field. The new facility, to cost around \$2,500,000, will maintain stocks of aluminum, stainless steel, alloy steel and cold finished bars.

Company President *John J. Pike*

said the new division will serve the industrial, missile and aircraft markets. The expansion move, he said, was a natural outgrowth of the company's long history of success in the industrial and oil field supply business. Republic Supply distributes industrial and oil well supplies and tools in the West, maintaining extensive facilities throughout California, Arizona and Washington.

Republic Supply Breaks Ground For Expansion



John J. Pike, right, president of the Republic Supply Co. of California, reviews plans for expansion of company's facility adjacent to corporate offices in Los Angeles. Left is T. E. Fellows of Fellows & Assoc., Inc., general contractors.

\$3 Million American Gypsum Plant Underway

ALBUQUERQUE, N. M. — Construction has started on the \$3 million American Gypsum Co. plant north of the city, expected to be completed Sept. 1.

The plant, which will turn out 100 million sq. ft. of wallboard annually, will be opened on the heels of the \$3.5 million Kaiser Gypsum plant, 40 miles north of here, slated to begin operations May 1.

The facility will employ 66 persons and will secure all its gypsum needs from the large White Mesa deposit near San Ysidro.

Officers of the firm include *M. M. Hardin*, president; *M. E. Zetterholm*, treasurer; *Arthur P. Quinn* of Quinn & Co., secretary; *Jack M. Bass, Jr.*, of Jack M. Bass & Co., vice president.

Armco Drainage & Metal Building Pipe Plant

HILLSBORO, ORE.—A new half million dollar plant to produce corrugated metal pipe is under construction here for Armco Drainage & Metal Products, Inc.

The 41,000 sq. ft. steel building is being erected here on a 16-acre site in the Hillsboro industrial tract.

According to *D. J. Stoker*, vice president and general manager of the company's North Pacific Div., the new plant will be Armco Drainage's largest facility on the West Coast for producing corrugated metal pipe.

Upon completion in November or December of this year, the new plant will replace the present Armco plant at 2321 S. E. Gladstone St. in Portland.

\$5,500,000 Aluminum Processing Plants

SAN JOSE, CALIF.—Plans for construction of \$5,500,000 worth of aluminum plants here by The American International Aluminum Corp. of Miami and the Baker Anodizing Co. of Los Angeles, have been announced.

The two firms will build on a nine-acre site of new Brokaw Road industrial land in North San Jose. The two firms together expect to require about 450 people when they open next June and ultimately the number will exceed 700 under full operating conditions.

American International Aluminum Corp. will build its \$3,000,000 extrusion plant on a five-acre site. Baker Anodizing Co. will build a \$2,500,000 plant on four adjoining acres to process aluminum into fabricated products for buildings and homes.

Eleven other firms are now negotiating for plant sites here.

GEARS FOR INDUSTRY
THE **Lufkin LINE**
OIL FIELD PUMPING UNITS

Did You Know . . .

that, the town of Lufkin, Texas, besides being world famous for coon hunting, and cooking, southern style, is also the home of Lufkin Gears for Industry, Oilfield Pumping Units, and Heavy Duty Truck Trailers?



V. J. Fawcett

that, the town is nestled among the tall pine trees of East Texas, where forests thrive and grow 5 times faster than in other parts of the U.S.? Heavy rainfall and warm temperatures make it so.

that, the great southern paper industry utilizing southern pine, long leaf and loblolly pine, began in Lufkin, Texas—home of the Southland Paper Mills, back in 1937? E. L. Kurth, Board Chairman of Lufkin Foundry and Machine, is President of Southland, and to Mr. Kurth goes the credit for pioneering this vast industry from its infancy. Modestly, however, he would be the last to claim such recognition.

that, Lufkin Oilfield Pumping Units have earned worldwide recognition for performance, dependability, and long life?

that, Lufkin Gears for Industry are fast gaining prominence in the fields of refining, pipelining, marine propulsion, aircraft ground support, and yes, even outer space?

But it's not all sweatin' and straining at Lufkin—the folks there are easy goin' and find time to go cat fishing, coon hunting, squirrel and crap shooting, and sometimes, go in for just plain loafing.

V. J. Fawcett

Lufkin FOUNDRY
& MACHINE COMPANY

. . . for more details, circle No. 53

Reliance Steel's New Warehouse



LOS ANGELES — Completion of a new third warehouse bay bringing metal service center facilities to a total of 170,100 sq. ft. was announced recently by Reliance Steel and Aluminum Co., here, distributors of steel, aluminum, magnesium and stainless steel.

As a result of careful planning of the new facilities, William T. Gimbel, president, reports that more than 80 per cent of all orders are filled and shipped within 24 hours after receipt and orders received even late in the evening, are filled by a second shift to insure shipment by 7 a.m. the following morning.

A unique installation to speed up stock handling in the new warehouse

is a new storage rack system for bar stock up to 20 ft., worked out by Gimbel and Robert Zickerman, assistant to the president.

In this system the bars are stored in permanently-placed bins or racks. An empty loading rack traveling on tracks is positioned at the selected bin for stock removal. The 10,000 lb. capacity bin is mechanically moved onto the loading rack for easy withdrawal of stock with overhead crane and small item quantities can be drawn from the racks by hand.

Reliance plans to install a McKay-automatic leveler and cutter enabling the cutting of continuous flat sheet to any desired lengths from coils to 60 in. wide without waste ends.

Ampco Plans New West Coast Site

HUNTINGTON PARK, CALIF.—The former A. O. Smith foundry here has been purchased by Ampco Metal, Inc., and will become the center of expanding West Coast activities for the Milwaukee producer of bronze alloys about August 1, according to J. D. Zaiser, Ampco president.

Ampco's present plant at Burbank, Calif., will be sold in connection with the transfer. Occupied since 1944, this location did not permit necessary expansion.

Zaiser said almost 50 per cent greater plant floor space will be gained by the move. Ampco plans to construct a new office building on the property.

Eimac Licensing Pact With English Company

SAN CARLOS, CALIF.—A licensing agreement between Eitel-McCullough, Inc., local manufacturer of Eimac electron-power tubes and English Electric Valve Co. of Chelmsford, England, has been arranged for the exchange of manufacturing rights and technical information.

The agreement will potentially expand the product lines of the two electron-tube companies in the field of negative-grid tubes, klystrons and traveling wave tubes. For Eitel-McCullough it marks the first licensing agreement with a foreign company and will further strengthen the company's position in both the U. S. and International markets.

Borden Announces Oregon Expansion

SPRINGFIELD, ORE.—The Borden Chemical Co. has announced an expansion program costing more than \$1,000,000 at its present operations here.

Included in the plan is construction of a new product development laboratory and a dry adhesives plant, coupled with further expansion of existing synthetic resin and formaldehyde production. Ground will be broken this spring for the new laboratory, according to *Augustine R. Marusi*, president of the company.

The plant here produces a variety of thermosetting adhesives for the forest products industry, including urea, resorcinol, resorcinol-formaldehyde and phenolic resins, plus lubricants and modifiers for wood gluing and powdered catalysts. Capacity of the dry adhesives plant will be 10 million pounds a year.

Springfield was chosen as the site of Borden's new research center, its eighth in the country, because of its central location in the heart of the West Coast forest products industry and because of the proximity to the University of Oregon at Eugene and Oregon State College at Corvallis, the company announcement said.

New Wire Company Opens Newark Plant

NEWARK, CALIF.—American Alloys, Inc., a new manufacturer of automatic and cut alloy welding wire has officially started operations here.

President *Edwin M. Westendarp* said the company is making shipments to customers throughout the country. Products include aluminum, stainless, magnesium, copper base and titanium alloy wires in spooled, coiled and cut lengths, and coated aluminum arc welding electrodes.

Westport Chemical Co. To Build at Longview

LONGVIEW, WASH.—Plans to build a research lab and chemical intermediate plant on a nine-acre Longview industrial site were announced recently by Westport Chemical Co. of Seattle.

The first unit of the plant, to produce chemical intermediates for use in plywood adhesive manufacture, will be completed in the fall.



New pneumatic strapping tools . . .

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TIMED IN FIELD TESTS, the new line of A. J. Gerrard pneumatic stretchers were able to cut strapping time up to 50%. These new stretchers enable an operator to tension strap by a simple twist of a dial. The stretchers will take various widths and thickness of band . . . will also operate well on an extremely small surface. They are easy to load. Strapping can be used from a continuous coil for fast, economical operations. Because of this unique combination of features, these tools are rated as the most versatile stretchers yet developed.

USE THE COUPON or the reader service card for complete specifications. Upon request we will also include our new catalog illustrating a complete line of strapping and packaging equipment and supplies.



CHECK THE FEATURES OF THIS STRETCHER

- Very small strapping surface required.
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- Strap easily inserted into stretcher.
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☐ Send free copy of Handbook of Strapping and Materials Handling Products.

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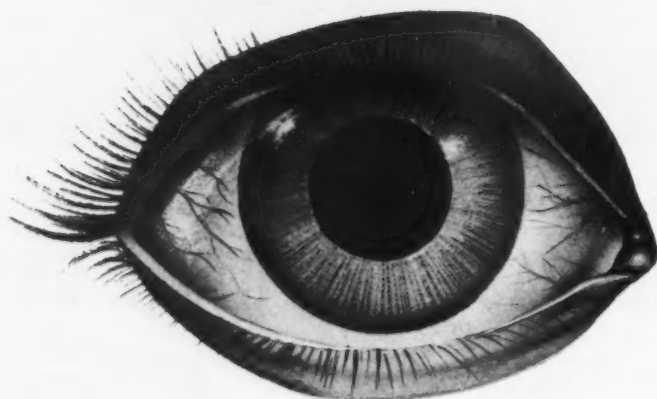
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Major Oil Strike Made In Alaska

SEATTLE — A phenomenal wildcat oil discovery on Alaska's rich Kenai Peninsula was announced recently by Standard Oil Co. of Calif. and Richfield Oil Corp.

The firms tested a jointly operated well which produced at the rate of 1,870 barrels a day. The test period was very short, through a half-inch choke.

Howard G. Vesper, president of Western Operations, Inc., Standard operating subsidiary, said that in the interests of conservation the new well must be produced at a much lower rate than the initial flow period.

W. P. Fuller Co. Plans Hayward Glass Facility

HAYWARD, CALIF.—W. P. Fuller Browner, president of W. P. Fuller & Co., has announced plans to build a new glass warehouse facility and distribution center here to serve all of Northern California.

To be completed this year, the property, building and equipment will represent an investment of between \$500,000 and \$600,000. The facility will serve as a distribution center for flat glass, auto glass, glass and aluminum doors and windows as well as other glass products.

The property, covering almost 17 acres, was purchased from the Western Pacific Railroad and lies between the Southern Pacific and Western Pacific tracks north of Whipple Road. The firm will employ between 30 and 50 persons.

Butter Nut Foods Building LA Coffee Roasting Plant

LOS ANGELES—Officials of the Butter-Nut Foods Co., Omaha, Neb., have announced plans to build an 80,000-sq.-ft. automated coffee roasting plant here.

According to Gilbert C. and W. Clarke Swanson, chairman of the board and president, respectively, of the coffee firm, the modern facility will be built on a seven-acre site just off the Santa Ana Freeway approximately eight miles east of the Los Angeles Civic Center.

The plant is expected to be completed and in operation by the end of this year.

Oregon Townsite Posted For Sale

LONGVIEW, WASH.—Plans to sell the original townsite of Grande Ronde, Oregon were recently announced by International Paper Co.

Grande Ronde is located on State Highway 18 in Polk County. It has served for many years as a headquarters for logging operations in the area.

The former Long-Bell Lumber Co. acquired the townsite from the Miami Corp. Grande Ronde has served as the base of logging operations for the Grande Ronde Tree Farm of International Paper Co.'s Long-Bell Div.

Although the townsite will be sold, International will continue to operate its Grande Ronde Tree Farm where future harvests of trees are now growing.

The Grande Ronde townsite includes 29 houses of two and three bedrooms, and 10 lots. Streets, water and sewers are included in the townsite. A nearby school serves Grande Ronde residents. Local businesses include a mercantile store, gas station, and restaurant.

Western Gear May Move to Everett

SEATTLE—The Western Gear Corp. is planning to move its plant from here to Everett in the foreseeable future according to company sources.

Joining with two other firms, Western Gear submitted the high bid for the Everett Naval Industrial Shipyard. Western Gear's Seattle plant is being taken over by the State Highway Dept. because it is in the path of the new Freeway.

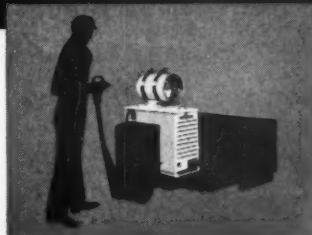
Western Gear, together with the Scott Paper Co. and the Pacific Tow Boat Co., both of Everett, bid \$2,100,000 for the 72-acre surplus shipyard.

Cadillac Plastic Opens Oakland Branch Office

OAKLAND, CALIF.—Cadillac Plastic & Chemical Co. has announced the opening of a new warehouse and sales office at 949 E. 11th St., here, to serve the industrial East shore of the San Francisco Bay region.

Frank M. Hunt, manager of Cadillac's South San Francisco branch at 313 Corey Way, will also be in charge of the Oakland unit. The firm distributes plastic sheets, rods, tubes and films, and plastic warehouse shapes.

Complete Range of Ready-Power Units Cuts Ton-Mile Costs for All Types of Electric Trucks



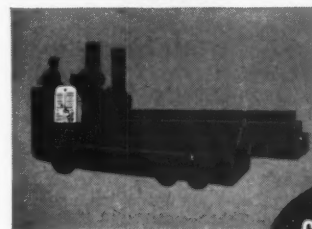
Walkies



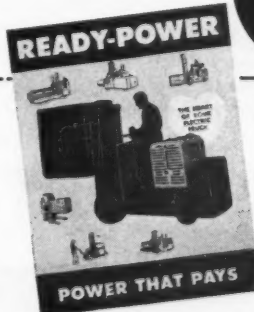
Narrow Aisle Trucks



Fork Trucks



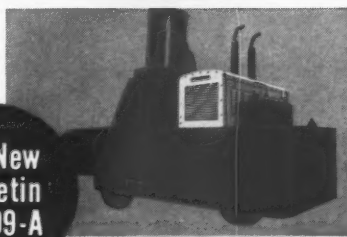
Die Handling Trucks



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Ready-Power offers a complete range of power units that increase work output and cut ton-mile costs for all makes and models of electric trucks. Ready-Power units generate electric power on demand. They assure full power at all times, for unlimited periods. Truck slowdown is eliminated. Ready-Power units are easily installed on new or used trucks. Return the coupon below for full information.

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... for more details, circle No. 56 on Reader Service Postcard

Ford Motor Announces Defense Products Group

NEWPORT BEACH, CALIF.—The Ford Motor Co. recently announced the establishment of a Defense Products Group here under the direction of *Gerald J. Lynch*, Company vice president and general manager of Aero-nutronic Div.

In addition to being responsible for all defense programs, the Group will also develop commercial product opportunities arising out of defense activities.

Lehmann-Fulton Names Western Distributors

SAN FRANCISCO—Five firms have been granted exclusive franchises for their respective areas to handle the Lehmann-Fulton line of boring tools in a major expansion of the firm's Western U. S. distributor organization.

The new distributors are: Coast Tool Co., Oakland, Calif.; Brandt Sales Co., San Diego, Calif.; Tool & Abrasive Supply Co., Los Angeles; Copper State Machinery, Phoenix; and SeaPort Co., Seattle.

San Diego Inaugurates Jet Helicopter Service

SAN DIEGO, CALIF.—Jet helicopter shuttle service throughout San Diego County was inaugurated here recently by Coast Rotors Co., a San Diego-based helicopter firm.

Jesse L. Haugh, president of the firm, said that a fleet of six turbojet Alouette II helicopters will be utilized in the taxi service. The jet copters will shuttle passengers between Lindbergh Field and industrial sites throughout the San Diego area.

Citing typical helicopter travel times, Haugh said the Alouette II can hedgehop passengers from Lindbergh Field to the Convair-Astronautics missile plant on Kearny Mesa in seven minutes, to General Atomics' facility in Torrey Pines in eight minutes, and to Rohr Aircraft Corp. in suburban Chula Vista in six minutes.

"To commercial travelers especially," Haugh said, "we believe this remarkable savings over surface travel time will prove enormously beneficial, particularly in rush hours when highways and freeways carry heavy traffic loads."

Upon activation of the Lindbergh Field Passenger Accommodation Booth, the Coast Rotors executive said, it will be possible for travelers in outlying areas to telephone for jet helicopter pick-up with as little as 20 minutes notice at approved origin and destination points.

Haugh said 10 passenger heliports have been approved throughout San Diego, and that nine additional locations, including four downtown San Diego rooftop sites, are awaiting property owner agreements for installation of landing facilities.

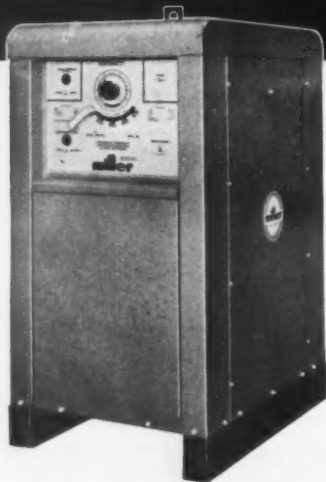
Bendix Votes to Change Its Name

SO. BEND, IND.—The stockholders of Bendix Aviation Corp. recently voted to adopt a new name, "The Bendix Corp." It is planned that the name change will be put into effect about June 1.

Malcolm P. Ferguson, Bendix president, said that the corporation is engaged in the manufacture and sale of not only aviation products but of a great number of automotive, electronic, nuclear, missile and space, marine, machine tool and industrial products.

NEW

BALANCED WAVE TIG WELDER DELIVERS DEEP, CLEAN "X-RAY" WELDS ON SHEET METAL or PLATE



- A bold new concept in electrical design and circuitry is introduced in the all-new Miller BWC-300MAP. One of several notable results is complete and automatic elimination of the d-c component at all welding currents . . . an essential in certain critical welding applications.

- Due to the specially designed transformer, high arc initiation voltage and unique circuit, arc-outages cannot occur.

- "Fail-safe" voltage reducer automatically lowers the high arc initiation voltage to a low open circuit voltage — even in case of malfunction of the reducer.

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EXCLUSIVES! — found only in new Miller BWC-300MAP:

1. Perfect balance throughout the entire welding range **EVEN DURING CRATER ELIMINATION.**
2. Arc stability **WITHOUT HIGH FREQUENCY** at as low as 18 amperes.

The outstanding versatility of this welder, and the specifics on its various features, are detailed fully on our form #BW-3 — a copy of which will be sent to you promptly upon request.

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... for more details, circle No. 57 on Reader Service Postcard

\$1 Million Detergent Plant For White King

LOS ANGELES—Individually formulated products to solve special cleaning problems will be available to industrial users as result of installation of a new \$1 million detergent production plant, Los Angeles Soap Company President Andrew K. Frothmann, has announced.

The company markets 89 different White King industrial products, including neutral and compounded soaps and synthetics in granulated or liquid form; lubricating soap; paste and base soaps; abrasive cleaners and specialized maintenance and cleaning compounds for every industry.

The new facilities are centered in a 110-foot-high, nine story tower, capable of manufacturing 30,000 lbs. of detergent per hour. The tower, resembling a missile on a launching pad, is 25 feet wide, hollow, and works on the following principle:

A scientifically blended, liquid mixture of chemicals is pressure sprayed into the top of the tower to form beads of a desired size. As the beads whirl down they are met by a massive up-draft of superheated air which removes moisture and forms the dry granules used as a base for detergent products. The granules are then screened and packaged.

The entire process beginning with automatic unloading of dry and liquid chemical bulk materials from railroad cars and tank trucks and ending with the finished package of White King D takes about three hours, Frothmann explained.

Idaho to Get \$2 Million Potato Processing Plant

BURLEY, IDAHO—A \$2 million potato processing plant will be built west of here with operation scheduled in September to employ between 600 and 700 persons and eventually 1200 workers, according to Golden Grigg, president of Idaho Industries, Inc.

Grigg said 4,000 acres of Magic Valley land, purchased by the firm recently, will be used to produce the potatoes used in the plant.

Ore-Ida Potato Products, Inc., will operate the plant as a joint venture in which Idaho Industries and a sister firm, Oregon Industries, Inc., share control.



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"Do-it-yourself" buyer-users will find Handidrive assembly is fast, easy. The pre-engineered stock units include: roller conveyors (either gravity push-along or live roller type), inclined belt conveyors, drive units, intermediate sections, curved sections, supports, hangers and other miscellaneous items.

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Pacific Industries, Inc. Acquires Midwest Firms

SAN FRANCISCO — Pacific Industries, Inc., has announced the acquisition of Midland Mfg. Co. and Wright Electronics, Inc., Kansas City, producers of quartz crystals for the electronics industry.

Midland and Wright are reported to supply more than 30 per cent of the industry's requirements for frequency control crystals used in color television, telephone systems, and micro-wave equipment, as well as in radar, missiles, telemetry, two-way communications for both military and civilian use, and electronic measuring instruments.

Pacific Industries, Inc., was incorporated in California in 1894 as the Central Eureka Mining Co. At that time, the sole operation was gold mining in the Mother Lode country near Sutter Creek, California. When the company began to diversify into other businesses and gold mining assumed a lesser role, the company's name was changed to Central Eureka Corp. Its present name was adopted in 1956.

Demonstrate New Structural Steel Bolt



F. J. Bruckner, Los Angeles district manager of U. S. Steel Supply Div., uses hand torque wrench to check torque-tension accuracy of new high strength bearing structural steel bolt, while Col. A. E. R. Peterka, Lamson & Sessions marketing manager, looks on.

LOS ANGELES—At a recent meeting of some 300 builders, architects and structural engineers here at the Statler-Hilton Hotel, advantages of a new high strength bearing structural bolt were demonstrated.

The threaded bolt, designed and pro-

duced by Lamson and Sessions Co., "combines the desirable features of a hot driven rivet and a standard high strength bolt," F. J. Bruckner said. He is Los Angeles district manager of U. S. Steel Supply Div., nationwide distributor of the new fastener.

Bruckner described the fastener as having rows of specially formed knurls on the shank between the bolt head and the threaded section. The knurls are set into the shank in a spiral fashion to reduce the driving load, and also to produce a body-bound fit when the fastener is driven or wrenched into place.

Farris Engineering Names Montana Representative

BILLINGS, MONT.—C. L. Boyer & Co., 1002 Division St., here, has been appointed field sales representative for Farris Engineering Corp., manufacturer of safety-relief valves, and Farris Flexible Valve Corp., producers of pinch-type valves.



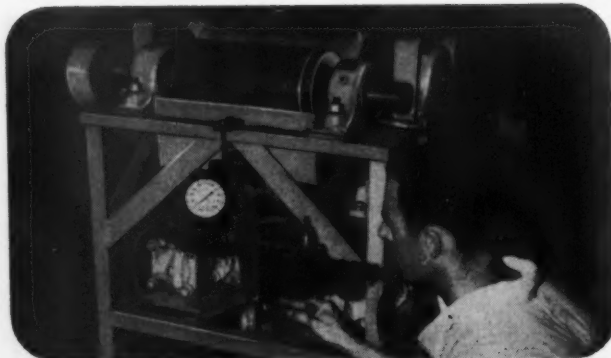
We TORTURE Rubber Rolls

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When a rubber roll comes into our special division for recovering, we give it rough treatment. Simulating actual conditions that exist in your plant, we are able to formulate a rubber compound to best cope with your specific needs. Industries represented include: automotive, aviation, petroleum, food processing, graphic arts and many more. We also manufacture a complete line of industrial rubber products on a custom basis. Please call on us.

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WESTERN INDUSTRY/APRIL 1960

Fentron Building Prefab Aluminum Service Station

SEATTLE—Prefabricated aluminum service stations are now coming off the production line of Fentron Industries, Inc., according to Fentron president, William F. Schiessl. The stations are designed by and produced for Standard Oil Co. of California.

The stations, each containing more than four tons of aluminum, are shipped by truck to the erection site, then completely assembled by four men in five days. They are being erected currently in Washington and Oregon.

Schiessl pointed out that with the many changes in traffic patterns often occurring because of the interstate highway program, the ability to dismantle this station and move it to a new site adds to its benefits.

Borg-Warner Controls Forms A New Division

SANTA ANA, CALIF.—The formation of a new division to be known as Borg-Warner Control division has been announced by the Borg-Warner Corp.

The new operation, here, will take over the personnel, products and existing facilities of the BJ Electronics plant of Borg-Warner Corp. It will have its own executive staff but will maintain close liaison with Weston Hydraulics, Ltd., a subsidiary of Borg-Warner in the field of hydraulic and pneumatic power equipment for the aircraft and space industry.

Fred T. Miller, formerly technical assistant to the president of Weston Hydraulics, Ltd., has been named vice president and general manager of the new division here.

Firm to Develop Perlite Deposits

MALAD, UTAH—A corporation to develop perlite deposits discovered in northwestern Oneida County has been formed under the name of Oneida Perlite Corp. with Marion J. Hess as president. Other officers are Udell Champneys, vice president and Paul H. Mills, secretary-treasurer.

The proposed developments include purchase of equipment for crushing and screening raw ore and bins at the mine in the Wright Creek area of the county. A perlite "popping" plant and bins and loading facilities are planned at Malad.

Control Data Corp. Opens Sunnyvale Branch

SUNNYVALE, CALIF.—The Control Data Corp. has announced the opening of a sales and applications office for the San Francisco Bay Area. Located at 920 E. Arques Ave., here, the Control Data office will be managed by Dale L. Wilson.

In addition to the sales and customer liaison activities, an applications staff has been established to handle computer programming efforts.

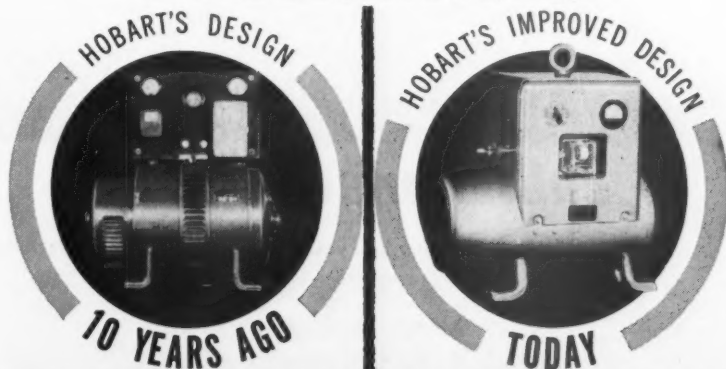
550 U. S. Firms Exhibit At Milan Trade Fair

WASHINGTON, D. C.—Registration of exhibitors at the 38th annual Milan International Trade Fair, April 12-27, in Italy shows 550 large and small U. S. companies represented among the 13,500 exhibitors of commercial, industrial and agricultural products.

More than 1,000,000 products from 120 countries and territories will be on display to an expected record attendance of 4,350,000 persons.

TEN YEARS OF PROGRESS... By HOBART

Just as the electric motor freed industry from the restrictions of line shafting, the motor-generator provides even greater advantages such as "on-the-spot" conversion from a.c. to d.c. power. A typical application in the materials handling field is for battery charging.



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Other changes include more efficient basic electro-mechanical design that facilitates easy modification by the customer for installation of recycling and remote controls, amper-hour and cell selectors, etc.

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American Pipe Joins New Hawaiian Firm

LOS ANGELES—The American Pipe and Construction Co., here, has announced plans to join with Honolulu Construction & Draying Co., Ltd., in organizing a new company to operate in Hawaii.

The new plant, estimated to cost about \$750,000, will be erected on a 15-acre site at Barber's Point, Oahu, to be known as American Concrete Pipe of Hawaii, Inc., the new company will make all types of reinforced concrete.

Willamette Plywood Expands Facilities

AUMSVILLE, ORE.—Expansion of Willamette Plywood Corp. production facilities here and the employment of 50 to 60 more men is anticipated within the next two years, according to company officials.

About 25,000 additional sq. ft. of floor space became available due to closure of a door manufacturing plant in the fall of 1959. Willamette will use the floor space for added production and for storage of hardwood veneers for use in the plant here.

Zellerbach Considering Denver Newsprint Mill

SAN FRANCISCO—Reed O. Hunt, president of Crown Zellerbach Corp., has stated that "investigation of a newsprint mill in the Denver area is progressing satisfactorily and we expect to reach a conclusion on whether or not to go ahead with this project during 1960."

He further pointed out that studies on the project, timber availability, labor, water and power supplies and mill site selection would determine the decision.

These remarks were included in the firm's annual report to stockholders. Hunt said that further expansion in pulp and paper production would most likely come from positions the company now holds in the West and the South, noting that the company holds a potential mill site at Ventura, Calif.

Western Pine Association Comparative Lumber Orders

PORTLAND—The Western Pine Association has issued the following report of comparative figures on lumber orders, shipments and production for the week ending March 19, based on information from 112 identical mills. The report covered the 10 woods of the Western Pine Region of which the Western Pines provide approximately 55% of the region's production.

Orders totaled 77,248,000 feet, compared with 73,576,000 feet for the previous week and 90,926,000 feet for the corresponding week last year. For the year to date orders are 92% of the total for the same period of 1959; shipments are 97% and production 105%.

Emmet Co. Moves To New Quarters

SO. PASADENA, CALIF.—Frank A. Emmet Co., Los Angeles electronic sales engineers representing a dozen national manufacturers in this field, April 1 moved to new quarters in the Paulson Bldg., 1810 Fair Oaks Ave., here.

Occupying a quarter of the new building, the Emmet organization will expand its coverage area, increase the sales-engineering staff, concentrate on components for the space age, as well as retaining a number of standard lines.



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GE Building \$1,000,000 Laboratory at San Jose

PLEASANTON, CALIF. — General Electric's Atomic Power Equipment Dept., San Jose, has begun construction of a 30,000 sq. ft. chemical and metallurgical lab building at its Vallecitos Atomic Laboratory here.

The building and lab equipment will cost in excess of \$1,000,000 and is expected to be completed by next fall.

The two-story structure will contain facilities for physical chemistry, general and coolant research, metal-water sodium diffusion, radiation chemistry, mass spectrometry, special measurements, metal and ceramic fabrication, metallograph, mechanical test and X-ray.

Pomeroy Engineering Moves to San Francisco

SAN FRANCISCO — The engineering division of J. H. Pomeroy & Co., Inc., located at Los Angeles since mid-1952, has been moved to offices in the new Pomeroy Bldg., now nearing completion at Sansome and Pacific Streets here.

Announcement of the division's relocation in the company's new world headquarters here was made recently by Robert N. Pomeroy, president of the international engineering and construction firm.

"In the new location, engineering will be much better coordinated with our domestic and foreign construction divisions and all other company operations," Pomeroy said.

Employee Suggestions Pay at Westinghouse

SUNNYVALE, CALIF. — A near-record total of \$256,089 was paid last year for approximately 9,000 suggestions submitted by idea-minded employees throughout the Westinghouse Electric Corp. The six-figure total was the third highest in the 50-year history of the company's suggestion system.

A total of 904 suggestions were made by employees at the Sunnyvale div., of which one-third were accepted and employees given awards totaling \$7,403. The highest award made to a Sunnyvale employee was \$465 for a suggestion on production of the Polaris missile launching equipment. That award went to Mettie O. Hightower, a machinist, of Santa Clara.



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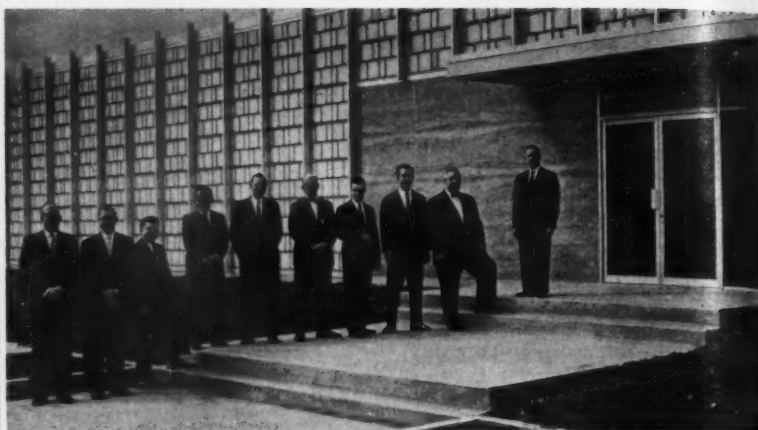


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Rheem Semiconductor Plant Opening



Executives and department heads at opening of new plant are left to right: Myrven W. Barnard, assistant manager, manufacturing; Donald D. Miller, manager, administration; Sidney Wiesner, manager, quality control; Paul A. Araquistain, manager, finance; Daniel D. Miller, manager, manufacturing; David D. Brower, manager, engineering; Dr. Leopoldo B. Valdes, manager research and development; Joseph D. Hurley, manager, marketing; Dr. Henry Marchman, vice president, operations; and Dr. E. M. Baldwin, vice president and general manager.

MOUNTAIN VIEW, CALIF. — Rheem Semiconductor Corp. opened its new \$2 million, 100,000 sq. ft. plant at ceremonies here recently attended by more than 200 San Francisco area community and business leaders. The company is a subsidiary of Rheem Mfg. Co. of New York.

Located on a 20-acre tract to permit future expansion, the one-story structure of glass brick and concrete is equipped with 700 tons of air conditioning, positive interior air pres-

ures and a filter system for dust-free interior climate control necessary for high quality semiconductor production.

Rheem Semiconductor was founded 12 months ago by Rheem Mfg. Co. and a group of 13 scientists, engineers and administrators headed by *Dr. E. M. Baldwin*, vice president and general manager. The company now employs 350 persons and plans to employ more than 1,000 by the end of 1960.

Ship Apparatus For Hawaii Cement Plant

SAN FRANCISCO—Electrical apparatus, motors, and control equipment for a cement plant in the Hawaiian Islands is starting to be shipped across the Pacific Ocean from this port.

The Westinghouse Electric Corp. received a contract for motors and control for the plant being built for Permanente Cement Co. of Oakland, Calif., by Kaiser Engineers.

Westinghouse is supplying motors to drive ball mills for grinding coral, the basic raw material; a complete adjustable voltage drive for the cement kiln, and additional motors and control for this equipment.

Permanente expects to place its Hawaiian cement plant, one of the first two cement plants in the Islands, into operation by August, 1960. It is being built on the leeward side of Oahu, approximately 30 miles northwest of Honolulu.

Sacramento Tract Site for Coca Cola

SACRAMENTO, CALIF.—The Coca-Cola Bottling Co. has purchased more than one acre of property in the new Oakridge Industrial Park here for the construction of a distribution warehouse.

This is the first building site to be sold in the tract, which fronts on Longview Drive and Orange Grove Ave., near the intersection of Watt Ave. and U. S. Highway 40.

Boothe Packing Opens Modesto Facility

MODESTO, CALIF.—A 46,000 sq. ft. plant was opened by Boothe Packing Corp. here on April 1st. The firm, which will have a work force of 150, is primarily engaged in the packing of Government rations. The new facility is located in the Beard Industrial District and served by the Modesto and Empire Traction Co.

Drill to Locate LP Storage Facilities

GRAND JUNCTION, COLO.—A new well drilling project to locate underground storage facilities for liquid petroleum gases has begun in the massive salt beds underlying the Moab, Utah, area by Suburban Gas Services Co., Pomona, Calif.

R. C. Harris, vice president in charge of operations, said water would be pumped into the beds, the salt leached out to leave a cavity, and the LP gases pumped down.

Scheduled for completion in August, the first chamber will have a capacity of about four million gallons of LP gas. Gas will be purchased from the Lybrook plant of Southern Union Gas Co., Four Corners, N. M., and stored for marketing in Western Colorado and Eastern Utah.

Pacific Semiconductors Branch Makes Move

CULVER CITY, CALIF.—Reliability functions of Pacific Semiconductors, Inc., maker of microminiature diodes, transistors and other semi-conductor devices, have been moved to large new quarters in Hawthorne, Calif.

Dr. Harper Q. North, PSI president, who announced the expansion, said the facility, a modern air-conditioned structure with 41,000 sq. ft. of floor space, is larger than the entire original Culver City building in which PSI began operations in June, 1954.

Other PSI facilities in Culver City and Lawndale which are occupied or under construction will total 292,000 sq. ft. by year's end.

Advise on Better Lumber Marketing

CASPER, WYO.—Addressing the Wyoming Sawmill Clinic Donald E. Clark, regional forester, said imported lumber of inferior quality is selling better in the United States than excellent Rocky Mountain area wood.

Inferior imported wood "sell here better because they are better graded, better stored and better marketed," Clark stated.

"I am sure the timber industry in Wyoming and throughout the West, with the aid of its associations and equipment-development industries, can do much in many ways to help," he added.

Production Increase For Anaconda Aluminum

COLUMBIA FALLS, MONT.—Mord Lewis of Louisville, Ky., executive vice president of the Anaconda Aluminum Co., has announced production at the plant here is expected to increase to 100% from 87½% capacity this summer.

He said one indicating factor in a major year ahead is the increase in automobile making.

The plant here is Montana's only aluminum producer.

Shell Gets Oil, Gas Leases in Washington

SEATTLE—Oil and gas leases on 483 acres of state-owned land in Lewis County here have been awarded to Shell Oil Co., according to an announcement from Land Commissioner Bert Cole.

In addition to a basic annual rental of 50 cents an acre, Shell bid a bonus of \$2.50 per acre for a 163-acre parcel and \$1.05 an acre for three other parcels totaling 320 acres.

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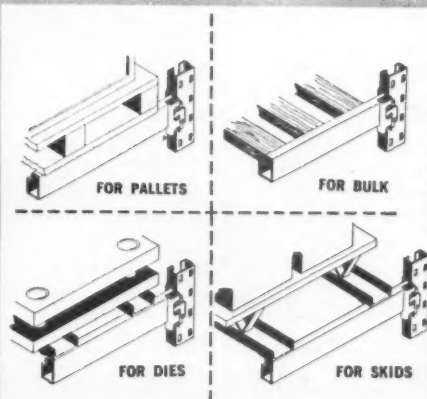
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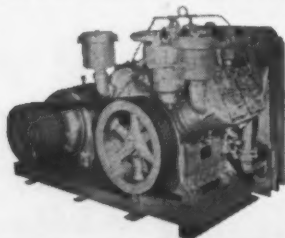
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Wiremold Co. Opens Stockton Warehouse

STOCKTON, CALIF. — Warehouse facilities have been opened here at 227 Bieghle St. by the Wiremold Co. of Hartford, Conn., for their line of flexible air duct.

The operation will serve customers in the nine Western States of Arizona, California, Idaho, Montana, Nevada, Oregon, Utah, Washington and Wyoming.

Initially, 10-foot lengths of duct for air conditioning, general industrial ventilation, and material handling and heavy abrasive work will be stocked.

Paul O. Roedel, division sales manager, said the facility was established "to serve our expanding market more efficiently in this area by ending the long haul from Hartford."

Arizona Portland Cement To Expand Rillito Plant

TUCSON, ARIZ.—A building permit for a \$1,500,000 expansion of the Rillito plant of the Arizona Portland Cement Co. for improved storage and loading facilities was disclosed recently.

Already under contract is the construction of five huge concrete silos which will increase the storage capacity at the plant by 75,000 barrels.

Still in the planning stage, a company spokesman said, are a new finish mill and grinding machinery, new loading facilities for both truck and rail transportation, and lengthening the spur track from the Southern Pacific to reach new loading docks.

Dyna-Matics Corp. Formed By Overholser and Haag

LOS ANGELES — Formation of Dyna-matics Corp. to manufacture control equipment, valves, regulators, turbine flow meters and pumps for aircraft, missiles and ground support systems was announced recently.

President of the new firm is J. H. Overholser, formerly sales and engineering vice president and director of Poly Industries, Inc.

Dyna-Matics executive vice president E. H. Haag was previously a partner in Air Products Co., a firm employing 900 people in the aircraft and missile field. New plant and offices of the Dyna-Matics are located at 11679 Sheldon, Sun Valley, California.

Clothing Manufacturing Plant for Tucson

TUCSON, ARIZ. — A \$175,000 lingerie manufacturing plant will be built here by an Eastern concern, according to Harry Bacal, chairman of the Tucson Industrial Development Board.

The new plant, with a work force of 200 at peak production, is to be built on a five-acre tract on Cherrybell Strav. Annual estimated payroll will be \$1,000,000. Production at the plant is expected to start by June 1.

An Arizona corporation will be formed for operation of the plant. Principals will be Sol Greenberg, Michael H. Roth and Jules Littwin, all of New York City.

New Test Coke Plant To Use Low-Grade Coal

SAN JOSE, CALIF.—A research facility for the experimental production of metallurgical coke from noncoking subbituminous coal will be built near Kemmerer, Wyoming and operated jointly by Food Machinery and Chemical Corp. and the U.S. Steel Corp. according to a recent announcement made by officials of both companies.

The test plant will have a designed capacity of 250 tons of coke per day and is scheduled for initial operation late in 1960. It will carry on further experimental work with a new process which has been developed and piloted over a period of years by FMC in an effort to make local industrial use of Wyoming low-grade coal.

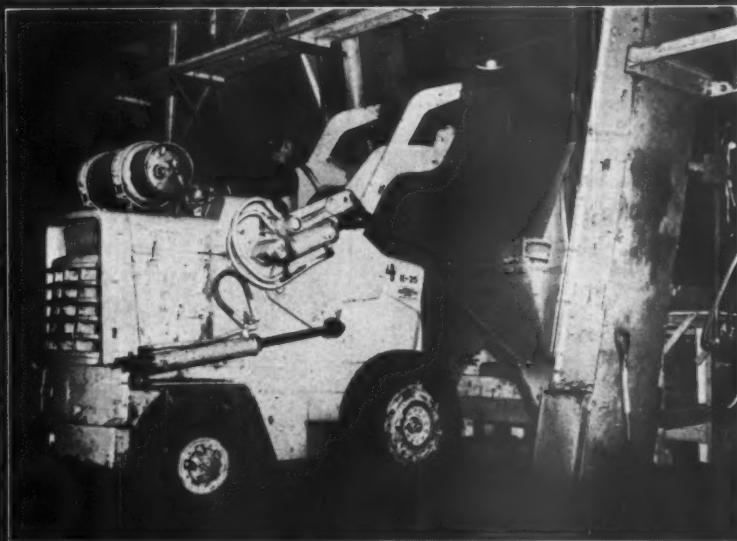
Mulino Sash & Door Opens Expanded Plant

MULINO, ORE.—The Mulino Sash & Door Co. opened its expanded plant here for public inspection recently. In addition to increasing floor space by 10,000 sq. ft., bringing the total working space to 50,000 sq. ft., a double-end tensioner to speed up production of wood millwork was installed at a cost of \$50,000.

Petroflex Takes Over Sure-Seal Corporation

NORTH SALT LAKE, UTAH — Petroflex Corp. here has taken over the business of Sure-Seal Corp. and its subsidiaries, according to an announcement from W. F. Sullivan, Petroflex vice president and general manager. The firm produces wax products.

Plant handling system built



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Davis & Furber Machine Company of North Andover, Mass., specializes in manufacturing textile machinery. Since 1952 this company has been a continuous user of "PAYLOADER" tractor-shovels on its foundry floor. Two Model HA's (2,000-lb. operating capacity) handle sand, move materials, remove cupola waste and the like. Recently the firm added Hough's new H-25 (shown) to its "PAYLOADER" fleet. This unit is used principally during the molding operation, bringing sand from storage to supply a 4-station sand system. At night it returns the sand from the muller to storage.

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108

HUGE ROTARY DRYER HEADS FOR CHILE

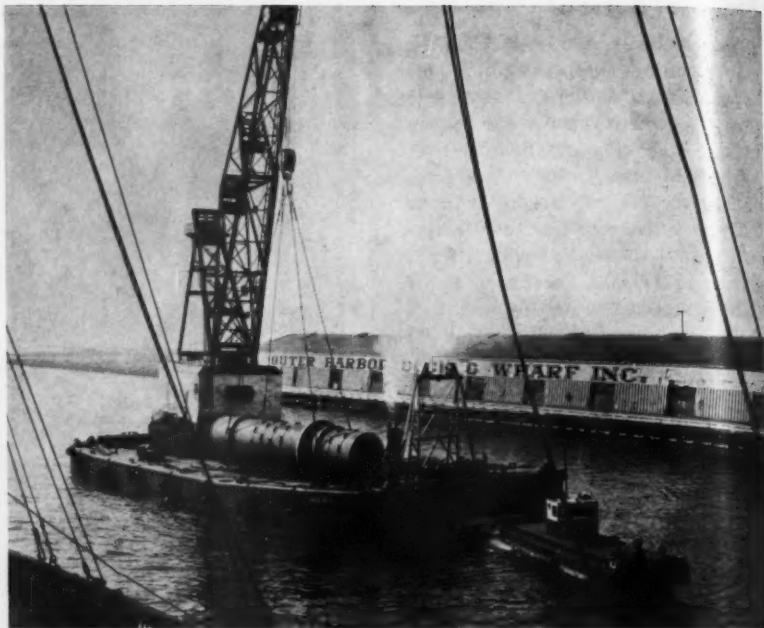


Photo taken from deck of freighter in Los Angeles harbor shows 52-ton rotary dryer being towed via barge-crane to the ship for loading.

LOS ANGELES—One of the largest pieces of rotary process equipment ever fabricated on the Pacific Coast was completed recently by Standard Steel Corp., here, and loaded aboard the Grace Lines freighter Santa Adela at Los Angeles harbor for shipment to Chile.

The 10-ft. OD, 60-ft.-long direct fired rotary dryer was built from ½-in. type A7 steel and will be used by the Chile Exploration Co., subsidiary of Anaconda Co., to process copper concentrate at its Chiquicamata, Chile mine, one of the most extensive open pit operations in existence.

The concurrent flow dryer was

treated with a special black heat-resistant paint that will combat corrosive action and high in-process temperatures.

The 52-ton unit was carried to the ship via a tug-powered barge crane and hoisted onto the deck of the Santa Adela. It was handled without packaging except for a protective covering over external gears and two pillow blocks to prevent in-transit tumbling.

Handling problems do not end here. The huge dryer will be unloaded at the port of Antofagosta, Chile and will be trucked more than 100 miles over dirt roads to the mine site deep inside the Chilean mountains.

Reynolds Mining Increases Coal Deposit Activity

BUFFALO, MONT.—Reynolds Mining Corp. has stepped up its experimental work on the vast coal deposits at Lake DeSmet recently, according to W. J. Kirven, attorney for the company.

The firm has been conducting experiments in the area for several years to determine the feasibility of locating a multi-million dollar aluminum plant in the area. Reynolds now has about 6,600 acres of surface land in the area under control, most of which is deeded, but the firm holds mineral rights for coal on the remaining acreage.

Rio Grande Railroad Orders Three Diesels From Germany

DENVER—The Rio Grande Railroad has ordered three newly developed hydraulic drive diesel locomotives from Germany. A railroad spokesman said the units are believed to cost about \$1 million and will be delivered late in 1960 or early in 1961. The fluid drive locomotives have been termed a technological break through in railroad power which will effect substantial maintenance savings. At present the Rio Grande has a fleet of 254 Diesel-electric locomotives. The order was placed with Krauss-Maffei of Munchen, Germany.

Plan Commercial Re-use of Fiber-breaking Nitric Acid

GRAND JUNCTION, COLO. — Dependent upon successful efforts to recover and re-use the fiber-breaking nitric acid, a pulp mill will be built in Colorado by Napex, Inc.

The firm hopes to make commercially feasible the use of nitric acid to break down wood and plant fibers, and recover the acid for re-use.

Before World War II, *Jean X. Desforjes*, a Frenchman, developed a method of recovering nitric acid after it had been used to make pulp. Napex has obtained rights to this process, and has made an agreement with a Vancouver, B.C., firm, established by Desforjes and others, to use this process and perfect it.

Name Seattle Firm As Sheffield Rep

SEATTLE — F. P. Rogers Co., 520 First Ave. South, here, has been appointed representative for the Sheffield Corp. covering the states of Washington and Oregon.

The Dayton company, a subsidiary of Bendix Aviation Corp. is a precision manufacturer of gauges, dimensional inspection instruments, automatic inspection and segregating machines, automatic assembly machines, thread and form grinding machines, cutting tools and ultrasonic machine tools.

New Warehouse Planned For Food Distributor

SPOKANE — United Retail Merchants have announced plans to build a new \$1,750,000 warehouse north of the Spokane city limits this year.

A 30-acre tract at Freya and Lincoln has been purchased from the Great Northern Railway. The building is to contain about 280,000 sq. ft. of storage and handling space.

Denver Firm Named Antara Chemicals Rep

DENVER — The Chemical Sales Co., 1125 Seventh St., here, has been appointed distributor for Antara Chemicals, a sales division of General Aniline & Film Corp.

The firm will handle distribution of Antara's line of surfactants, sequestering agents, iodophors, glycols and other products.

Midway Trailer Opens New Colorado Plant

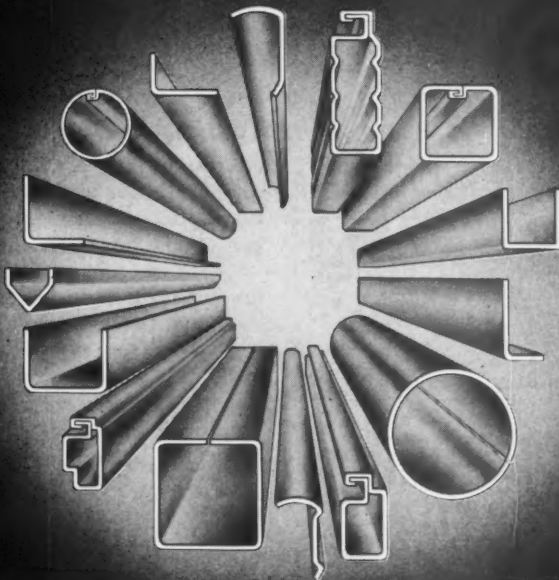
LAMAR, COLO. — Midway Trailer Corp., Grapevine, Tex., has opened the new manufacturing plant here keyed to the production of custom built mobile homes — employing 45 persons and turning out eight to 10 units per week, according to *R. C. Isham*, president and general manager.

Isham estimated that within one year, some 125 employees would be turning out 20 to 30 mobile homes per week.

Blackman Plastics Moves Into Escondido Plant

ESCONDIDO, CALIF. — Blackman Plastics has recently moved its rapidly expanding Industrial Products Div. from Los Angeles to its newly constructed facilities here at 1120 W. Industrial St., according to *Horace Blackman*, president.

The Division is now in full operation in the firm's 13,000 sq. ft. building. The Blackman Toy and Hobby Div. will occupy an adjacent new plant.



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Arapahoe Chemical Expands Facilities

BOULDER, COLO. — Arapahoe Chemicals, Inc., has started a new \$175,000 manufacturing facility at the plant here, as part of the firm's \$265,000 expansion program which will double its present production capacity.

Also under construction is a new office and laboratory building for the company which manufactures pharmaceutical intermediates. Approximately 15 per cent of its production goes to the foreign market.

Dr. John W. Pringle has been named plant superintendent to be in charge of all chemical production, according to Oscar Jacobson, manager.

Biological Supply Co. To Build in Oregon

PORTLAND — Plans of Carolina Biological Supply Co. to establish a West Coast plant at Gladstone in Clackamas County, were revealed recently.

The Company is understood to have invested about \$80,000 in land, inside the Gladstone city limits. The firm, which furnishes biological supplies and specimens to industrial school laboratories, was reportedly influenced in its choice of a site by availability of a supply of uncontaminated fresh water, without mineral deposits.

The firm headquarters at Elon College, North Carolina.

Groundbreaking New Welding Supply Site



At the recent groundbreaking for H. M. Parker & Son's new welding supply headquarters at 11255 Van Owen St., No. Hollywood ave., left to right, S. Lee Miller, vice pres. and general sales mgr. of the Parker firm; Clarence Richmond, Los Angeles region manager of Linde Co.; Arthur S. Owen, vice pres. and mgr. of Parker's welding div. and Robert B. Perry, secy.-treas. of Parker.

NORTH HOLLYWOOD, CALIF. — Construction of a new \$300,000 welding supply headquarters for H. M. Parker & Son here is underway on a building site totaling 46,000 sq. ft.

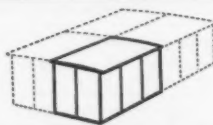
Parker president, Norman B. Parker, said that the site was selected because of its central location in the San Fernando Valley and its access to proposed freeway routes. Construction is scheduled for completion in July.

The new quarters will boast the latest equipment in the welding supply industry.



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WESTERN INDUSTRY/APRIL 1960

Private Industry Aids UC Forest Products Lab

RICHMOND, CALIF.—The University of California's Forest Products Laboratory here has been aided by private industry to expand its program of basic and applied research, according to the Laboratory's annual report for 1959.

Forest Products Laboratory Director *Fred E. Dickinson*, listed 16 different California companies and lumber and wood product associations which contributed gifts and grants-in-aid to support research at the lab last year.

He said the contributions from industry pay five full-time and nine part-time employees of the staff of 33.

Voit Rubber Corp. Plans Expansion

PORTLAND—W. J. Voit Rubber Corp., a subsidiary of American Machine & Foundry, has let a contract for construction of a new building on N. Columbia Blvd. to join the present two buildings and add approximately 35 per cent to the firm's manufacturing and warehouse space.

Estimated cost of the 12,000 sq. ft. expansion will be \$200,000, including \$100,000 in new machinery to further automate the company's modern manufacturing plant, according to *H. A. Wright*, general manager.

New Tube Divisions For Hughes Aircraft

LOS ANGELES — Two new divisions of Hughes Aircraft Co. have been established for the development, production and marketing of commercial vacuum tube devices, *Iden F. Richardson*, Hughes Products Group manager, has announced.

They are the Microwave Tube division and the Vacuum Tube Products division.

Lab Research Plans San Jose Plant

SAN JOSE, CALIF. — A proposal for a synthetic detergent plant in South San Jose has won the endorsement of the County Planning Commission here.

Representatives of the Laboratory Research Corp. reported on a plan for a \$350,000 plant on the north side of Downer Ave. The plant will employ a staff of about 35.

WESTERN INDUSTRY/APRIL 1960

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Garrett Sales Staff Special Workshop



Harry Conrey, left, demonstrates Optimount shaft-mounted to a conveyor belt, and powered by a belt drive arrangement. He also set up a chain and sprocket drive, with the unit placed in a base horizontally level with the motor. Kneeling by the motor are Lou Lussier and Charlie Hubbs. Standing, left to right are Andy Gloster, Jim Frealy, Alan MacDonnell and Joe Pimentel.

LOS ANGELES—Salesmen at Garrett Supply Co. recently were given a special workshop session, to better acquaint them with Boston Gear's "Op-

timount" series of helical geared reducers, ratiomotors and flanged reducers.

Garrett power transmission specialists Bob Dick and Harry Conrey and Boston Gear factory representative Ed Frech gave detailed lectures on the construction of the units and their unlimited versatility of application.

Dick showed the units in detailed disassembly, pointing out their strength and relative simplicity. Conrey demonstrated adaptability of the units for mounting directly on a drive shaft, or in either vertical or horizontal bases. Frech colored slides, emphasized that using 66 mounting accessories a total of 680 different mounting arrangements are possible.

Sidney Machine Rep

LOS ANGELES—Dayton & Bakewell have been appointed Southern California distributors for Sidney Machine Tool Co., of Sidney, Ohio.

Sidney makes heavy duty engine, precision tool room and tracer controlled lathes.

Thermomet Opens New San Fernando Plant

SAN FERNANDO, CALIF.—A California corporation has announced the completion and opening of its new plant at 1817 First St., here.

Organized by a group of chemists, metallurgists, and engineers, the company is engaged in the research, development, and production of metal and alloy protective coatings to provide surface stability to the ferrous metals, nickel- and cobalt-base high temperature alloys, graphite, and the reactive and refractory metals and their alloys.

Southern Pacific Planning Bay Area Industrial Park

SAN FRANCISCO—The Southern Pacific Co. has announced plans for its first industrial park to be developed in the San Francisco Bay Area.

L. E. Hoyt, the railroad's industrial development manager, is asking the Santa Clara City Planning Commission to rezone 75 acres of SP owned land in northwest Santa Clara to planned manufacturing.

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WESTERN INDUSTRY/APRIL 1960

Report Progress Toward Low Cost Saline Water Conversion

"Fresh water from the sea is much closer to being economically competitive with water obtained from normal sources of supply than most people realize," was the encouraging prospect held forth in a paper at a recent meeting of the Industrial Minerals Div. of the Society of Mining Engineers of AIME in New York City.

"In 1950, cost estimates for sea water conversion ranged up to \$5 per 1,000 gallons," said *W. Sherman Gillam*, Chief, Basic Research Div., Office of Saline Water, U. S. Dept. of Interior. "Improved processes and equipment developed during the subsequent five years reduced that cost to around \$2 per 1,000 gallons. At present, additional improvements in certain distillation processes and the development of a freezing process appear to justify a projected cost of about \$1 per 1,000 gallons. Anticipated future conversion costs of less than \$1 per 1,000 gallons for large installations appear to be reasonable.

"Improved membranes and better equipment have reduced the present cost of demineralizing brackish water by electrodialysis to around \$1 or less, depending on the total salt content. Future improvements may lower that cost.

"Low cost saline water conversion is a problem which to date has not been satisfactorily solved, although excellent progress is being made. New ideas and new processes are needed and can be achieved only through fundamental research. It is unlikely that the conversion processes presently available for the demonstration plants are the best that can be developed. Further research not only can improve those processes but holds promise of developing entirely new methods which may permit the attainment of a major breakthrough."

Mr. Gillam pointed out that in figuring the cost of converted water, as offered in his paper, capital investment alone represented about half the total cost of the product water. He continued: "Care must be exercised to utilize the same yardstick or cost-estimating procedure for any comparison. On that basis, fresh water from the sea is much closer to being economically competitive with water obtained from normal sources of supply

than most people realize. For some areas of the world it is already the more economical of the two, and, as conversion costs come down, more and more cities and communities will solve their water problems satisfactorily by tapping this vast, inexhaustible new source of supply."

The AIME is a professional organization for engineers and geologists.

Transval Electronics Consolidate Operations

EL SEGUNDO, CALIF. — Transval Electronics Corp. has consolidated manufacturing, research and administrative operations in a one-story plant of precast concrete tilt-up construction. The 80,000 sq. ft. facility was obtained on a 20-year lease from Factory Development Corp.

President of Transval, *Berj Hago-pian*, states that the six-acre site now makes it possible for the company to undergo a 100 per cent expansion.



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General Fireproofing Opens New LA Facility

LOS ANGELES—Under the branch management of *Dwight B. Steele*, the General Fireproofing Co. has recently opened a new two-story brick and reinforced concrete branch and warehouse facility at 1631 Palo Alto St. here to serve the Southern California area.

The 16,500 sq. ft. building contains air-conditioned offices and display area, plus storage and service shops in the lower level.

The firm, a manufacturer of business furniture with headquarters in Youngstown, Ohio, also has a factory at San Luis Obispo, Calif.

Bank Installing GE Data Process System

DENVER, COLO. — The First National Bank here has approved plans for installation of a new electronic data processing system which will ultimately handle all deposit accounting for the Bank.

Bank President *Eugene H. Adams* has announced an agreement between the Bank and the General Electric Co.'s Computer Dept. at Phoenix, Ariz., for installation and maintenance of the new system. Scheduled for installation in mid-1961, the system will comprise a new GE Model 210 computer supported by high-speed sorting, printing and other electronic equipment.

"Mr. Rebar" Retires



SAN FRANCISCO—*Giuseppe "Joe" Fabbrì*, known as "Mr. Rebar" to hundreds of West Coast construction men, retired March 31 after 47 years of service with Soule' Steel Co. Joe, who joined Soule' in 1913 when it was a three-man organization, has been associated with the manufacture of the company's reinforcing bar for nearly a half-century. He and his wife plan a summer trip to his native Italy and will then return to their home here.

Zero Mfg. Acquires Technical Enameling

LOS ANGELES—*John B. Gilbert*, president of Zero Mfg. Co., has announced the firm's acquisition of Technical Enameling Co. of Burbank, Calif. *Joseph T. Moore* will remain president of Technical Enameling which will operate as a wholly owned subsidiary of Zero.

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WESTERN INDUSTRY/APRIL 1960

Raytee Becomes Division of Coast Centerless Grinding

LOS ANGELES — Plans to add a 20,000 sq. ft. plant across the street from its present site at 761 E. Slauson Ave., here, have been announced by the Coast Centerless Grinding Co.

Raytee Mfg. Co. recently became a division of Coast Centerless, making possible a complete manufacturing facility for pneumatic, hydraulic and cryogenic assemblies; special application anti-friction bearings; precision mechanical assemblies; and gear boxes, from the design-engineering stage through assembly and testing.

Both companies will remain under the direction of Ray F. Tissue, president, and Ronald Raite.

New Machine Tool Rep For Allison-Campbell

SEATTLE — Hallidie Machinery Co., Inc., 210 Hudson St., here, has been appointed as distributor in the states of Washington and Oregon for the Allison-Campbell Div., American Chain & Cable Co., Inc., Bridgeport, Conn., according to an announcement made today by C. D. Cummings, sales manager.

One of the largest machine tool and equipment distributors in the Northwest, Hallidie Machinery has branch offices in Spokane, Wash., and Portland, Ore.

Empire Products Begins Machine Shop Operations

OGDEN, UTAH—Machine shop operations have begun at The Empire Products Co., 761 West 12th here, according to owner William Miller, formerly of Denver.

The firm, which will employ 30 to 40 persons by early summer, will do contract manufacturing in tools, dies and fabrication, specializing in defense subcontracts, he said.

Kaiser Gypsum Plant Nearing Completion

ALBUQUERQUE, N. M.—Construction has been 75 per cent completed on the \$3½ million Kaiser Gypsum plant 40 miles north of here, a company spokesman has announced.


When completed the plant will have an annual productive capacity of 120,000 tons of gypsum building products. Scheduled completion date is in May which is a month ahead of schedule.

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Contract News for the West

LOS ANGELES — Over \$15,000,000 in Army Ordnance contracts was awarded Feb. 26 and March 11 by the U.S. Army Ordnance District, 55 S. Grand Ave., Pasadena.

The largest award went to *Sperry Rand Corp.*, Sperry Utah Engineering Lab Div., Salt Lake City, \$5,333,673 for research and development; \$3,230,166 for engineering services on the Sergeant missile system; \$1,474,394 contract for Sergeant missile repair parts, and \$944,360 for Sergeant missile repair parts and test equipment.

Douglas Aircraft Co., Inc., Santa Monica, contracts in the amount of \$954,772 for Nike Hercule missile launching area items and adaption kits; and \$900,000 for Nike missile trailers.

Harvey Aluminum, Torrance, \$1,237,565 for 20MM projectiles; \$588,280 for assembly fuses, and \$95,000 research and development contract for cartridges.

Aerojet-General Corp., Downey, \$443,266 research and development contract.

California Institute of Technology, Pasadena, \$303,612 for research and development work at Jet Propulsion Lab.

Vinnell Corp. of California, Alhambra, \$260,541 for technical services in support of Military Assistance Advisory Group.

North American Aviation, Inc., Rocketdyne Div., Canoga Park, \$65,000 classified contract, \$25,000 for Redstone missile spare parts.

Motorola, Inc., Scottsdale, Ariz., \$30,555 for power amplifiers and \$32,050 research and development contract for miniturization and repackaging of transponders.

Missile Air Div., U. S. Chemical Milling Corp., Manhattan Beach, \$26,477 research and development for spherical bulkheads.

The San Francisco Ordnance District, with headquarters at 1515 Clay St., Oakland, Calif., has announced \$1,465,607 in contracts awarded mostly for missile work. Nineteen of the 22 companies and research centers involved are in the Bay Area. They are:

Stanford Research Institute, \$1,040,000 for continued study of army surface to air missile systems for national defense.

A \$58,207 award went to *Librascope Div., General Precisions, Inc.*, Sunnyvale, for a firing unit for use in the Saturn space vehicle program. The control unit and energy source to be developed by Librascope will trigger the motor units in the separating stages of Saturn.

Carad Corp., Redwood City, \$75,000 for transformers; *Food Machinery and Chemical Corp.*, San Jose, \$53,644 for engineering services on the Vigilanta B and M-113 vehicles; *Hewlett Packard Co.*, Palo Alto, \$58,039 for

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WESTERN INDUSTRY/APRIL 1960

(Contracts continued)

electronic equipment; *Standard Trailer Co.*, San Leandro, \$19,861 for semi-trailers; *Ball Bearing Co.*, San Carlos, \$16,706 for bearing units; *McCormick-Selph Co.*, Hollister, \$13,257 for electric ignition systems; *Laher Spring & Tire Co.*, Oakland, \$11,771 for spring assemblies for vehicle maintenance; and *Stanford University*, \$11,147 for extension of research program in progression of theories.

In the Pacific Northwest, contracts were awarded: *Isaacson Iron Works*, Seattle, \$26,025 for forging steel; *Tektronix, Inc.*, Portland, \$12,720 for calibration equipment; and *Boeing Airplane Co.*, Seattle, \$11,500 for experimental missile work.

Northrop Corp.'s Nortronics Div has announced receipt of contracts totaling \$22,647,800 for continued production and engineering work on the U.S. Army Hawk missile. Of the contracts received, \$20,883,800 is for follow-on production of missile airframe items with deliveries through Sept. 1960, and missile ground handling equipment with deliveries through April 1961.

Rohr Aircraft Corp., Chula Vista, Calif., announced \$11,500,000 in follow-on orders for commercial aircraft components for the Boeing 707 and 720 series and for the Convair 880.

Lear, Inc., Santa Monica, received \$2,250,000 in additional funding on the Army's Nike-Zeus anti-missile missile from Bell Telephone Labs, Inc.

Transval Electronics Corp., El Segundo, Calif., received in excess of \$600,000 from Boeing Airplane Co., Seattle for two types of power supplies.

Pacific Automation Products, Inc. received from the Convair Div. of General Dynamics contracts totaling about \$545,000 for missile electronic cabling and installation and for a special study and experimental project.

An estimated \$200,000 contract for the building of specialized hydraulic ground support equipment to be used at Atlas missile launching sites was awarded the *Paul-Munroe Co.*, Bell Gardens, Calif., by Western Gear Corp.

WESTERN INDUSTRY/APRIL 1960

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Phoenix Engineering



H. A. Whitbeck, Jr.
J & L Steel



E. G. Scott
Global Van Lines



H. E. Cooper
Reynolds Aluminum



Paul Jones Jr.
Horkey-Moore

■ **Walter H. Girdler, Jr.** has been named chairman of the board and chief executive officer, Matthews Corp., Hawthorne, Calif.

■ **Donald A. Benbow** is new sales manager of Airaterra, Glendale, Calif.

■ **Frank R. Carvell** has been appointed general manager of the B. F. Goodrich rocket motor plant at Rialto, Calif.

■ **Donald A. Hendricks** is newly elected president of Phoenix Engineering & Mfg. Co., Phoenix.

■ **Harold A. Whitbeck, Jr.** has been named manager of new sales office for Jones & Laughlin Steel Corp., Stainless and Strip Div., San Francisco.

■ **E. Gordon Scott** has been appointed vice president of Global Van Lines, Los Angeles.

■ **Harold E. Cooper** is general manager of the newly former Mobile Home Panel Fabricating Div. of Reynolds Aluminum Supply Co., Los Angeles.

■ **Paul Jones, Jr.**, has joined Horkey-Moore Associates, Torrance, Calif., as manager, customer relations.

■ **Alan R. Paulsen**, Washington State Univ. student, has been awarded \$250 scholarship by Pacific Intermountain Express.

■ **James R. Taylor** has been appointed sales engineer for the B. H. Hadley, Inc., Pomona, Calif.

■ **James J. Glick** has been named technical sales rep, Western Region of Union Carbide Plastics Co., at Los Angeles.

■ **Carl R. Jardine** has joined Aeromutronic, a Div. of Ford Motor Co., as manager of Computer Components, Newport Beach, Calif.

■ **Joseph A. Sbordone** has joined Bourns, Inc., Riverside, Calif., as director, Quality Control, Trimpot Div.

■ **T. J. Josalle** is to fill the newly created post of general sales manager of Aeroquip Corp.'s Marman Div., Los Angeles.

■ **Robert O. Randall** has been appointed head of Petrolane Gas Service, Inc.'s new Utility Div. at Long Beach, Calif.

■ **Bernard Goldwasser** has been named West Coast manager for the Bureau of Engraving, Inc., Industrial Div.

■ **Dr. Glenn G. Havens** has been elected to the board of directors of Telecomputing Corp. of Los Angeles.

■ **Stuart G. Whittelsey, Jr.** is newly appointed assistant to the general manager of Litton Industries' electron tube div., San Carlos, Calif.

■ **Nicholas L. Brecker, Jr.**, has been named national sales director of Mad-dux of California, Los Angeles.

■ **Roy F. Brown** is newly appointed marketing manager, Scientific and Process Instruments Div., Beckman Instruments, Inc., Fullerton, Calif.

■ **Don Conroy** is new area chief, field liaison engineering of McCormick Selph Associates, Los Angeles.

■ **William G. Nelson** has been named Southwestern sales representative of Columbia Steel Casting Co., Inc. to headquarter at Los Angeles.

■ **John W. Whalen** has been appointed manager of Dashew Business Machines, Inc.'s new Toronto, Canada office.

■ **Hugh T. Dutter, Jr.**, Beverly Hills, has been named a representative of Day-Brite Lighting, Inc.

■ **Edward J. Horkey** has been appointed vice-president engineering, Houston Fearless Corp., Los Angeles.

■ **Larry J. Aubrecht** has been named director of management consulting services, Western staff, Ebasco Services, Inc., San Francisco.



Dr. A. M. Small
Hughes Aircraft



L. G. Johnson
Cleveland Cap



E. H. Walthers
Crown Zellerbach



B. J. Morris
Ador Corp.

■ **S. H. Bellue** has been named vice president in charge marketing for Osborne Electronic Sales Corp., Los Angeles.

■ **Kenneth C. Moulton** is new director of marketing for Beckman Instruments, Inc., Fullerton, Calif.

■ **W. J. Wiley** has been named manager of missile manufacturing at Aerojet-General Corp.'s Downey, Calif., plant.

■ **Donald W. Lassell** and **Edward C. Kinyon** have been named general superintendents at U. S. Steel's Columbia-Geneva Steel Divisions at Pittsburgh, Calif., and at Torrance, Calif., respectively.

■ **Lewis A. Phillips** has been appointed chief industrial engineer, Carlsbad, N. M., potash operations, U. S. Borax & Chemical Corp.

■ **Arthur Antrasian** has joined Packard Bell Electronics as sales manager, garage door openers, at Los Angeles.

■ **Sherman B. Margoles** has been named sales manager of Polysyn, Inc., sub. of Poly Industries, Inc., Pacoima, Calif.

■ **Pete Lewis** has been promoted to sales training manager of Hyster Co.'s new Sales Training Dept. at Portland.

■ **William Bajari** of Norwalk, Calif., is new field representative for the Arc-air Co., Bremerton, Wash.

■ **Charles F. Siebold** has joined Lockard Tool & Engineering Co., plastics div., Lynwood, Calif., as production manager.

■ **Dr. Walter R. Hearst**, president and founder of Flamort Chemical Co., San Francisco, passed away March 20.

■ **H. Malcolm Ogle**, development projects consultant for General Electric Atomic Power equipment Dept., San Jose, Calif., has been issued his 24th U. S. patent.

■ **George Matacek** has been promoted to chief chemist of the Bee Chemical Co., Western div., at Gardena, Calif.

■ **Sturgis L. Stentz** has been made manager of the Systems Div. of Sargent Engineering Corp., Huntington Park, Calif.

■ **Fred W. Pollei**, Salt Lake City, has been named manager Portland Cement Co. of Utah.



J. F. Burley
National Supply



J. D. Nommensen
Peerless Pump
Div. FM&C



L. J. Sacks
GE Silicone



L. E. Ringger
Columbia-Geneva
Div.

■ **Dr. Arnold M. Small** has been appointed manager, product effectiveness laboratory, Hughes Aircraft Co., Ground Systems Group, Fullerton, Calif.

■ **L. G. Johnson** has been named Northern California Dist. sales manager, South San Francisco, by the Cleveland Cap Screw Co.

■ **E. H. Walthers** has been named general manager for the new national Distributor Sales Div., Crown Zellerbach Corp.

■ **B. J. Morris** recently became general manager of Ador Corp., Fullerton, Calif.

■ **Joseph F. Burley** has been appointed superintendent of industrial relations, National Supply Co., Torrance, Calif.

■ **John D. Nommensen** has been named process pump product sales mgr., Peerless Pump, Hydrodynamics Div., Food Machinery & Chemical Corp.

■ **Leonard J. Sacks** has been appointed Western dist. sales manager for General Electric's Silicone Products Dept. Downey, Calif.

■ **Louis E. Ringger** was recently named assistant to the general supt., Columbia-Geneva Steel Div., U. S. Steel Corp., Provo, Utah.

■ **Arnold A. Johnston** has been appointed military sales engineer, GPL div., General Precision, Inc., Los Angeles Region.

■ **Howard C. Zintz** has been promoted to Director of Engineering, a newly created post at Rucker Co., Oakland, Calif.

■ **Paul Martin** has been named Seattle plant manager, Continental Can Co. replacing retiring **Iver J. Olsen**.

■ **H. Dewayne Kreager** has been engaged by Simpson Timber Co., Seattle, as economic consultant.

■ **Glenn E. Allen** has been named superintendent of Jamestown Mines, Allied Chemical Co., Boulder, Colo.

■ **Theodore E. Wans** has been named manager of U.S. Plywood's branch at Salt Lake City.

■ **Dr. Albert C. Hall**, Englewood, Colo. has been named vice president of engineering, The Martin Co.

■ **Nino V. Davi**, supt. Pacific Steel Casting Co., Berkeley, took top honors in annual Lilliequist competition with a technical paper.



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SEATTLE

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Seattle 8, Washington
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■ **J. S. Detweiler** has been named oils planning manager for the Manufacturing Dept., Standard Oil Co. of Calif., Western Operations.

■ **Carl T. Weitzel**, president of Mechanical Specialties Co., Los Angeles, died March 13 of a heart attack.

■ **Murray S. Gelber** and **James W. Tuthill** have been elected to board of directors and executive committee, Salsbury Corp., Los Angeles.

■ **Dr. Richard W. Eppley** has joined the Astro Systems and Research Labs of Northrop's Norair Div. at Los Angeles.

■ **Carlyle B. Stitt** has been appointed South Pacific district agency and construction manager, Westinghouse Electric Corp.'s apparatus div., Los Angeles.

■ **Frank C. MacLernan** has been named to fill the new position of corporate director, airline support services, Garrett Corp., Los Angeles.

■ **John A. Ellis** has been appointed manager of Southern Pipe's manufacturing facility in the Hawaiian Islands.

■ **John A. Swint** has been appointed director of operations, Ogden Div. of Marquardt Corp.

■ **George J. Miller**, Fremont, Calif., has been appointed plant superintendent, Titan Metal Mfg. Co., Div. Cerro de Pasco Corp.

■ **Kimberly C. Hallamore** has been appointed manager of newly established Washington, D. C., office of Siegler Corp.

■ **Robert T. Arnold** is manager of the newly organized Anaheim Electronics div. of the Electronic Engineering Co. of Calif.

■ **Lee Adams** has joined Curtiss-Wright Corp., Santa Barbara, Calif. div. as manager of its new etched circuit dept.

■ **Dick Sil** has been appointed sales manager of Radar Relay, Inc., Santa Monica, Calif.

■ **Robert Englert** Culver City, Calif., has joined Telemeter Magnetics, components div., as applications engineer.

■ **Burton M. Kuck** has been appointed senior project engineer, Kinetics Corp., Solano Beach, Calif.

■ **John H. Scott** is head of the new West Coast office at San Francisco of Girdler Process Equip. Div. of Chemtron Corp.

■ **Hugh Jacobson** has been appointed manager, Systems Sales, at Burbank, Calif. Branch of Librascope Div., General Precision, Inc.

■ **Robert F. Goodwin**, vice president, was elected president of Airtek Dynamics, Inc., Los Angeles. He succeeds **Gustave G. Michel** who was named chairman of the board.

■ **Ray G. Boyd**, **Fred J. Drewes** and **Howard C. Holmes** have been named vice presidents of Kaiser Aluminum and **Jack W. Watson** a vice president of Kaiser Aluminum & Chemical, a subsidiary.

■ **William Hyland** has been named Western sales manager for Van Norman Machine Co., a division of Van Norman Industries, Inc. He will headquarter at Los Angeles.

■ **Harris W. Beck**, Western general passenger agent for Santa Fe Railway who began transportation career in 1908, retired recently at San Francisco.

CLASSIFIED SECTION

Space is sold as advertisers' inches. All advertisements in this section are 1/8 inch short of contracted space to allow for borders and composition. Rates are \$16.00 a column inch. Copy should be sent in by the 20th of preceding month if proofs are required; by the 15th if no proofs are required.



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At the Beach opposite the Zoo.

Fortune Electronics Named Rep. for Clevite Products

SAN FRANCISCO — Fortune Electronics Corp., 1321 Mission St., here, has been named distributor for the complete line of Clevite Transistor Products in the Northern California trading area.

Clevite, Waltham, Mass., produces general purpose diodes, power transistors, rectifiers and other semiconductor devices.

Foundries Need Half Billion in New Equipment

The nation's foundries will need over \$509 million in new capital equipment during the next two years according to a national survey completed recently by the American Foundrymen's Society, Des Plaines, Ill., international technical society of the metal castings industry.

In addition to these capital needs, the foundries expect to spend nearly \$6,800,000,000 for materials, supplies, and special services in producing an estimated 37.6 million tons of finished castings in 1960 and 1961.

Task Appoints Avtronics For Southern California

ANAHEIM, CALIF. — Avtronics Inc. of Inglewood, Calif., has been appointed to represent Task Corp., here, according to an announcement from Joseph A. Fryer, Task sales manager. The Avtronics organization will have sales responsibility for the Southern California area.

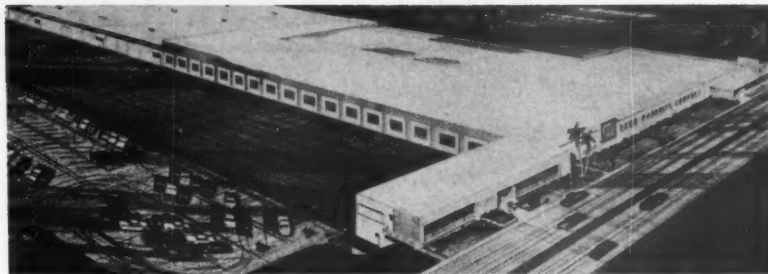
Royal Industries Adjusts Corporate Structure

LOS ANGELES — Royal Industries, Inc., has completed a change in corporate structure from a parent company with four subsidiary corporations to a single company with four divisions, according to president J. R. Johnson.

Johnson said that the purpose of the re-organization is to reduce operating costs, strengthen corporate relationships and streamline operating activities.

The four divisions of Royal Industries are Vard, formerly Vard, Inc.; Audiotone, formerly Audio Co. of America; Royal Jet, formerly Royal Jet, Inc.; and Ideal-Aerosmith, formerly Ideal-Aerosmith, Inc.

Worley Moves Into EKCO Whittier Plant



Last month the complete manufacturing facilities and the 200 employees of Worley & Co., Pico Rivera, Calif., moved into the Whittier plant of Ekco Products Co. Worley, manufacturer of steel lockers and related equipment for schools, became a division of Ekco in 1957.

WHITTIER, CALIF. — Outgrowing its 90,000 sq. ft. Pico Rivera plant because of continued expansion, Worley & Co. has moved its manufacturing facilities to 802 W. Whittier Blvd., here, where it will share the modern 200,000 sq. ft. Ekco plant with three other Ekco affiliates.

The other affiliates are McClintock Mfg. Co., McClintock Products Co. and the Glaco Co. of Southern California. The Whittier offices will also house Southern California sales and headquarters of the Ekco Housewares Div. and thus mark the consolidation

of all Ekco, Southern California operations under one roof.

McClintock Companies make an extensive line of meat and food handling and display equipment for supermarkets. Glaco applies silicone resins to commercial bakers pans.

Presray Corp. Names Rep

PALO ALTO, CALIF. — Integrated Handling Systems, here, has been appointed the exclusive sales and engineering organization in 13 Western states for the Presray Corp.

David Round

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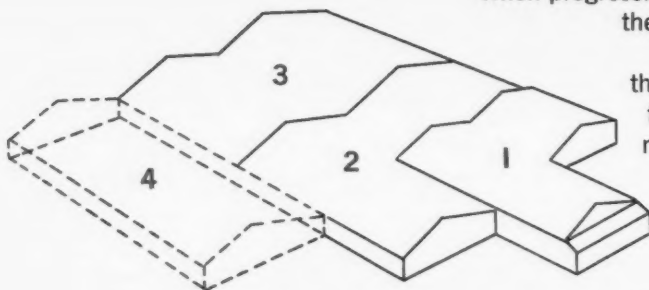
SAN DIEGO, 1300 Wilson Ave. GRidley 7-3141

PHOENIX, 301 South 26th St. BRidge 5-4471

SEATTLE, BARDE STEEL CO.,
2709 Utah Ave., MAIn 3-6730



Soulé structures keep pace with fast growing Coquille Valley Lumber Co.

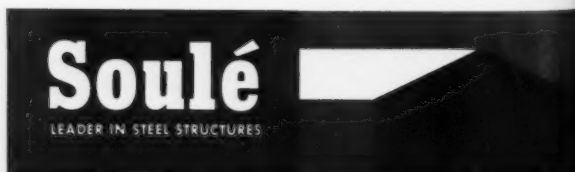


When progressive Coquille Valley Lumber Company plotted their growth plans, they included Soulé Series 412 steel structures. The photo shows the present facility. In the drawing, **1** shows the original plant area, **2** shows the planer mill addition, **3** the sheathing and plywood plant and **4** indicates the future sanded plywood plant. Because of their all-bolt construction, amazing clear work area, Soulé structures can be added quickly, at very low cost. Soulé structures can help your plant grow, too. Call for a planning chat.

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